REALITY

1961

Canon Law for Religious Women

LOUIS G. FANFANI, O.P. AND KEVIN D. O'ROURKE, O.P.

Canon Law for Religious Women is a commentary on those parts of the Code of Canon Law which pertain to religious women. The challenge offered by the religious life to the numerous women who assume the burdens of this particular state, has increased with the centuries. In her wisdom, the Church recognizes and applauds the prodigious feats accomplished by communities of nuns and sisters. She knows that because of the works and prayers of these women, countless numbers of the faithful remain true members of the Mystical Body of Christ. And because of this knowledge, the Church, over the centuries, has perfected her legislation concerning the religious state. The authors of the present volume have made a noteworthy contribution to the religious state by bringing to the attention of women religious, in readable form, the Church's legislation on all phases of religious life. Herein will be found chapters on elections, privileges, the novitiate, confessors, chaplains, professions, and so forth. No pains have been spared in making this book a clear, up-to-date presentation and explanation of the Churchs' laws which apply to religious women.

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God, the Highest Truth, has created and guides human intellect, not that it may daily oppose new truths to rightly established ones but rather that having eliminated errors which may have crept in, it may build truth upon truth in the same order and structure that exists in reality, the source of truth.

Pius XII

Encyclical Humani Generis.

REALITY is published by the student brothers of the Dominican Province of St. Albert the Great. Intended primarily for circulation within the Dominican Order, REALITY's articles are largely the result of work done by the students within the Pontifical Faculty of Philosophy, River Forest, Illinois, and the General Studium of Theology, Dubuque, Iowa.

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cum permissu superiorum

CORRESPONDENCE

From His Grace
The Archbishop of Port-of-Spain
27, Maraval Road
Port-of-Spain
TRINIDAD

November 30th, 1960

The Reverend Editor,
REALITY
Dubuque, Iowa

My dear Editor,

It gave me such pleasure to receive the copy of REALITY redivivus that I cannot delay to thank you for having sent it.

The broad sweep of its contents shows how far the Dominican students of St. Albert's Province are from living in an "ivory tower," caring, Gallio-like, little for the fierce philosophical and theological controversies of our day.

It is my conviction that (contrary to the opinion voiced by not a few) that the Dominican vocation has never been more needed than now, and that bringing St. Thomas out of the schools and into the market-place, by teaching Catholic Truth in language accessible to lay folk unaccustomed to scholastic terms and method, is the really triumphant use of our Thomistic education.

By keeping your hands steadily on the pulse of the "real" problems of modern life you are "filling up what is wanting" to the application of Thomistic principles to these problems, as St. Thomas would have you do, and we pray God help us do: *quae egit imitatione complendo.*

With best wishes and congratulations,

Sincerely yours,

in Domino et Dominico
✠Finbar Ryan
Archbishop of Port-of-Spain

St. Dominic's Church
775 Harrison Avenue
New Orleans 24, La.

The welcome accorded the resumption of the publication of REALITY clearly indicates the high regard this Dominican Students' publication has won among a wide circle of readers over a period of seven years. Although the readers were largely members of the Order in all parts of the world, nevertheless there was a considerable audience in the seminaries of the United States and among Catholic religious educators.

Projected as an opportunity for students of philosophy and theology to express themselves in the fields of their sacred studies, it was designated as a training ground for the average as well as exceptional students in the communication of truths proposed, expounded and grasped in the lecture hall and assimilated in sedulous, serious study.

REALITY has treated the wide range of topics considered in the classroom or suggested by the consideration of them. The writers have won commendation for their competency in the presentation of diverse subjects—mostly drawn from ecclesiastical studies which, by direction of the Holy See, are steadily expanding to equip the priest for the challenge and conditions of our times.

REALITY is a students' publication. While we should not look for the professional touch of the experienced teacher or skilled scholar, yet we happily come upon the evidence of talent and, at times, very special aptitudes that give sturdy promise for the future. The present hour calls for the preparation of more and more competent men to provide the answers in tongue and pen for a more and more uncertain future.

It is to be hoped that many students will aspire to the field of writing. Its importance cannot be easily exaggerated. We must have teachers. By profession we are teachers, competent or incompetent as we may be. We must have missionaries at home and on the fields afar and they must be expressive. We must have parish priests and they must expound truth privately and publicly.

Not enough will be able to give their talent and time exclusively to writing, but all students—average students as well as those of exceptional endowments—should seize the opportunities offered through REALITY during their student days in order to prepare themselves to share with others the goods of truth, acquired through listening, learning, studying. Specialists will be few. The Church will have them as guides, moderators. What the thousands and millions need is the writer, whose words will be written or spoken and who will preach and teach in the sense of the Church and with the common touch of the people. MAY REALITY HELP TOWARDS THIS END.

Edward L. Hughes, O.P., S.T.M.
Pastor

CONVENTO S. DOMENICO
Piazza S. Domenico
Pistoia, Italy

20-12-1960

Dear and Rev. Friar Students,

Thanks for the copy of REALITY which you have sent me. After a brief absence, I'm glad to note that you will continue to publish the review. I wish you all the best that you may continue to write articles as in the previous years and so prepare yourselves for your future apostolate.

Yours in our Holy Father Dominic,

Rev. Rosario Saldanha, O.P.

CLEMENT OF ALEXANDRIA AND GREEK CULTURE

THE EARLIEST DAYS OF CHRISTIANITY witnessed an alarming conflict between the Christians and the Greek philosophers. The Greek philosophers considered the cross of Christ as folly. The Christians, on the other hand, often sneered at the worldly and vain wisdom of the Greeks. They even thought that Greek culture was evil and perhaps the work of the devil himself. It was vain to ask for anything more than simple faith, they believed. Tertullian insisted that we should do away "with all attempts to produce mottled Christianity of Stoic, Platonic and dialectic composition."[1] The Christians need nothing more than Christ. Tatian was another writer unsparing in his ridicule of the Greeks.[2] It is no wonder then that Celsus could write that although a few Christians were educated, the majority said, "Do not examine but believe! Your faith will save you! The wisdom of this life is bad, but that foolishness is a good thing!"[3]

The Christian missionary encountered a difficult problem. Between the two ideologies of Christianity and Greek culture lay a deep abyss, with no bridge to gap it. Until a bridge could be built, until a common point of agreement could be found from which to start the dialogue, there was little hope of converting the Greek philosophers.

A step in the right direction was taken by Justin Martyr, who had himself been a pagan philosopher. When he was converted he continued to wear the philosopher's robes, so that some contact was made. But his philosophy was now Christianity and he proceeded to disparage the Greek philosophy. You claim Socrates as your wise man, he said, and yet Socrates himself admitted that he knew nothing.[4]

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[1] Tertullian, *On Prescription against Heretics*, ch. 7 (ed. Roberts & Donaldson, vol. III, *The Ante-Nicene Fathers*; New York: Charles Scribner's Sons 1926), 246. Henceforth *The Ante-Nicene Fathers* series will be referred to as AN.

[2] Tatian, *Address to the Greeks* (AN., vol. II), 65-83 *et passim.*

[3] Origen, *Against Celsus,* I, ch. 9 (AN., vol. IV), 400.

At the turn of the third century, however, a more complete solution to the problem was offered by the school of Alexandria. It was only natural that the solution should come out of this city, for the circumstances were ideal. As Cardinal Newman declares:

> Situated in the centre of the accessible world, and on the extremity of Christendom, in a city which was at once the chief mart of commerce, and a celebrated seat of both Jewish and Greek philosophy, it was supplied in especial abundance, both with materials and instruments prompting to the exercise of Christian zeal.[5]

Among the foremost members of this school was Clement of Alexandria (c. 150-215), successor to Pantaenus and teacher of Origen. Clement attacked the problem in a manner similar to that which St. Paul had used at Athens. Rather than condemn the Greeks outright for their idolatry, Paul had accepted what he could, an altar to the unknown God, and upon that he built his case for the true God.[6] Clement does likewise. Introducing his work, *The Stromata,* he says:

> Our book will not shrink from making use of what is best in philosophy and other preparatory instruction. 'For not only for the Hebrews and those that are under the law,' according to the apostle, 'is it right to become a Jew, but also a Greek for the sake of the Greeks, that we may gain all.'[7]

The purpose of this paper will be to discover exactly what was the relationship between Greek philosophy and Christianity, in Clement's opinion, and what merit did the Greek culture have.[8]

THE TRUTH IN GREEK CULTURE

Clement does not give blanket approval to all Greek philosophy. In fact, he condemns the Epicureans and the materialists outright, because the Epicureans make pleasure their god, and the materialists deny God altogether, asserting that there is no efficient cause of the universe. Even at that, he reserves his strongest words for ". . . the art of wrangling and sophistry, since sentences of the sophists not only bewitch and beguile the many, but sometimes by violence win a Cadmean victory."[9]

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[4] Justin Martyr, *Horatory Address to the Greeks,* ch. 36 (AN., vol. I), 288.

[5] John Henry Newman, *The Arians of the Fourth Century* (London: E. Lumley 1871), 42.

[6] Acts 27:22-31.

[7] Clement of Alexandria, *Stromata,* I, ch. 1 (AN., vol. II), 302f.

[8] Clement is the first one that we know of to expound in writing a harmony between Christianity and Greek philosophy. It is most likely, however, that the real originator of the idea was Pantaenus. For further information cf. Le Nourrey's discussion of the question (Migne, PG, 9, 1262).

Leaving aside a consideration of these sects, one finds among the other Greek philosophies, many truths. For example, they certainly have a natural science, a knowledge of the sensible world. They have an ethics with an understanding of the virtues and many precepts of holiness. They even proclaim a providence and a life hereafter where the good will be rewarded and the evil punished.

These truths are not manifested as easily as they are in Christianity. They do not stand out because there is so much falsehood surrounding them. Clement compares them to the roses growing among the thorns and the pearls hidden in the oysters' flesh. But just as the skilled gardner can pluck out the rose from among the thorns, and the craftsman can find the pearl, so the intelligent Christian can discover the truths hidden in Greek philosophy.[10] They are there and can be found, if one is willing to work diligently to find them.

Those, then, who insist on splitting Christianity and the Greek philosophy by saying that this philosophy is evil and the work of the devil, are extremely foolish. Evil has an evil nature and can never produce something contrary to its nature, namely good. But truth is certainly good and virtue is good, and both are found in Greek philosophy. Moreover, this philosophy makes men virtuous, and the practice of it belongs to the best Greeks, not the worst. How can we say then, Clement asks, that their culture comes from the devil?[11] And even if the devil did produce some good, would he not at that time be good himself, an angel of the light? The Christian should take truth wherever it is found, therefore, and not disdain it because of its source.[12]

"There is then in philosophy, though stolen as the fire by Prometheus, a slender spark capable of being fanned into flame, a trace of wisdom and an impulse from God."[13]

GREEK PLAGIARISM

The Greeks are not to be left gloating in their own wisdom, however. They must contribute to the dialogue too, by admitting that everything which they possess in the way of truth, they originally stole from the

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[9] Clement, *op. cit.*, I, ch. 10, 310.
[10] *Ibid.*, II, ch. 1, 347f.
[11] *Ibid.*, VI, ch. 27, 517.
[12] *Ibid* , VI, ch. 8, 495.
[13] *Ibid.*, I, ch. 17, 320.

Hebrews. This should not come as a surprise to the Greeks, because if they look they will see that they steal from each other too, and human nature being what it is, they would be much more likely to steal from foreigners.[14] It is their duty then to admit where they really got them. To do otherwise is senseless.

This aspect of Clement's teaching lacks originality. It was preached earlier by Justin Martyr, Theophilus of Antioch, Philo and Josephus. Nevertheless, it is interesting enough to merit some elaboration.

How does Clement connect the Jewish and Greek cultures? He takes both a direct and an indirect approach to the problem.

The strongest link uniting the two civilizations is the Bible. In the third century before Christ seventy elders of the Jewish race, it is said, translated the Bible into Greek, while the Jews were under the domination of the Macedonians. This translation, commonly known as the Septuagint, was produced, according to Clement, under the guiding inspiration of God; it was clearly intended by Providence, so that the Greeks might also have some of the wisdom of the Hebrews. The Septuagint in itself is not sufficient proof though, because it does not go back far enough in history. Clement claims that there was another translation, which was made some time before the reign of Alexander the Great (336-323 B.C.). It was from this translation that the greats such as Plato and Pythagoras studied.[15]

What does Clement offer in the way of documentation to show that these famous Greeks read the Scriptures? Mainly, he flatters them. These were very learned men and so they must have read the sacred texts and drawn on them. But in regard to Plato, Clement also claims the authority of Aristobulus who in his first book addressed to Philometor said that Plato followed the Jewish laws and had manifestly studied all that was in them.[16] Aristotle may also be traced directly to the Hebrew line, for Clearchus the perapatetic asserts that he knew a Jew who associated with the philosopher.[17]

An indirect approach also serves the purpose of Clement. Firstly, he demonstrates that all the Greek learning came from the barbarians. Plato went to Egypt where he picked up much knowledge, and he was also the disciple of Sechnuphis of Heliopolis. Moreover, he pays homage to the barbarians as truly learned, and does not deny that he obtained all the best tenets of philosophy from them. Sonoches, an Egyptian taught Pythagoras, and Eudoxus learned from another Egyptian, Cnidius of Konuphis.[18] These names are only samples. Clement continues on, building up a list of very impressive historical data, to prove that the barbarians were the founders of philosophy, and not the Greeks. And then he gives the key to his whole indirect proof. Who were the oldest barbarians? he asks. They were the Hebrews. Thus we should conclude that this is where all philosophy came from in the first place:

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[14] *Ibid.*, VI, ch. 2, 481ff.

[15] If there was any Greek translation of the Bible before the *Septuagint*, Biblical scholars are at the present time unaware of it.

[16] Clement, *op. cit.*, I, ch. 22, 334.

[17] *Ibid.*, I, ch. 15, 316.

> Of these, by far the oldest is the Jewish race; and that their philosophy committed to writing has the precedence of philosophy among the Greeks, the Pythagorean Philo shows at large; and besides him, Aristobulus the Peripatetic, and several others, not to waste time, in going over them by name.[19]

The second indirect proof is to delineate parallels between the Greek and Jewish history. For example, he shows how Moses led the people through the desert at night in order to avoid the pursuing Egyptians. Militades, the Athenian general, did the same thing in order to get away from his enemy. The conclusion that Clement draws is that Militades must have learned this by observing the tactics of Moses.[20] The advantage of proving that the Greeks received everything from the Hebrews is easy enough to see. It makes all the Greek truths as much a part of the Christian heritage as of the Greek. Besides, it makes the Greeks indebted to the Christians, since their ancestors gave the Greeks the truth in the first place.

But the argument fails. Clement spends many pages, and draws on an enormous amount of erudition, to produce tables proving the antiquity of the Jews. This is all that he shows, however; he never establishes any relationship of real causality between the two cultures. Even when he mentions that Plato does not deny that he got his best tenets from the barbarians, he does not give any evidence that Plato affirmed this, or was even faced with the question.

CHRISTIANITY: TRUE WISDOM

The truths which the Greeks have, however, are still not enough. The Greeks do not attain true wisdom, but only approach it. They speculate about the truth more than they actually possess it. The Greeks breathe

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[18] *Ibid.*, I, ch. 15, 315.
[19] *Ibid.*, I, ch. 15, 316.
[20] *Ibid.*, I, ch. 24. 337.

the same air as the Christians, but they breathe it in a different way.[21] They try to represent scenes of reality, but they lack the third dimension.[22]

As has already been admitted, the Greeks do have a knowledge of this world, but this is very elementary. True science goes far beyond the things of this world. It is elevated to spiritual realities which the senses have never seen nor heard. One would not even think about these things if he were left on his own.[23] True science brings knowledge about the mysteries of God Himself.

This is the knowledge for which man was principally made, and the Greeks lack it. They used to have a dim knowledge of God, but now they have forgotten even that.[24] Now they can only name Him. How can they possibly do more? They fumble even in the things which pertain to this world, and they often miss the mark of truth. Will they succeed then when it is a matter of the creature talking about the creator?[25] No, men speaking about God are not reliable. They conceive God by attributing their own affections to Him; they find the probable rather than the true.[26]

But the Christian does not depend on mere human knowledge. God Himself teaches the Christian through the Scriptures and especially through the person of Jesus Christ. The Christian thus knows many things which are completely incomprehensible to the Greeks, because he learns them from Christ, to whom they are not incomprehensible. Christ teaches them to the Christian because He would not suppress any truth from him which is required for his education.[27]

The follower of Christ comes to know the great mysteries of life. He knows not only human things, but divine entities as well. He knows things of the past, the present and the future—how we are, were and will be.[28] He passes beyond the opinion of the Greeks and speeds to knowledge free of deception, reposing in the truth. He comes to the true gnosis for which all the organs of perception exist.[29]

If, perchance, the Greeks should doubt this, Clement offers them a proof in the spread of Christianity. The Christian wisdom has radiated throughout the entire world, even to the very small villages. It has been accepted by whole families at a time, besides the individual conversions. Rulers have tried to destroy this religion from the very beginning, and it flourishes all the more. Contrast this to the Greek culture which is restricted to the Greeks, and even then, to only a few of them. If some emperor comes along and suppresses it, the philosophy completely vanishes. What is the reason for this? The Christian knowledge is a gift from God, and so it cannot perish, while merely human doctrine does perish.[30]

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[21] *Ibid.*, VI, ch. 18, 515.
[22] *Ibid.*, VI, ch. 7, 493.
[23] *Ibid*, VI, ch. 8, 495.
[24] *Ibid.*
[25] *Ibid.*, VI, ch. 7, 493 and VI, ch. 18, 519.
[26] *Ibid.*, VI, ch. 17, 515.
[27] *Ibid.*, VI, ch. 8, 496.
[28] *Ibid.*, VI, ch. 7, 494.
[29] *Ibid*, VI, ch. 18, 519.

Clement's advice to the Greeks, then, is very simple: "Receive Christ, receive sight, receive light, 'in order that you may know well both God and man' [*Iliad* v, 128]."[31]

VALUE OF GREEK CULTURE

When one realizes the superiority of the Christian wisdom, the question immediately arises, why study the Greek culture at all. It has already been shown in part, that many actually did hold this opinion. They wanted nothing to do with logic, philosophy, or even natural science, since they considered faith to be sufficient. But Clement of Alexandria disparages such an opinion. Even if philosophy were evil, as so many postulate, he insists that the Christian still has an obligation to study it. For he cannot condemn what he does not know. Philosophy, however, is not evil. It contains the partial truth, and so it is good. Indeed, it may even be honored for its own sake if it controls the tongue and the appetites. And when it is cultivated for the honor and knowledge of God, then it is truly valuable and worthy of an even greater preeminence.[32]

In the light of knowledge about God, philosophy is very important for the Greeks. God had it in mind to save all men through the coming of Christ. But in order to do so, He had to prepare man. To the Jews, He revealed Himself directly. He gave them the law of Moses and His prophets to guide them, and conditioned them to receive Christ into their race. The Jews were God's chosen people. Still, that did not mean that God neglected the other nations. Philosophy was peculiarly given to the Greeks, then. This would be their preparation, leading them to the true wisdom in several ways:

First of all, philosophy is necessary to the Greeks for righteousness, just as the law of Moses is needed by the Jews. It gives them a system of ethics which will help them to lead morally good lives until Christ will teach them further.

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[30] *Ibid.*, VI, ch. 18, 519f.

[31] Clement of Alexandria, *Exhortation to the Heathens*, ch. 11 (ed. Roberts & Donaldson, vol. II, *The Ante-Nicene Fathers*; New York: Charles Scribner's Sons 1926), 203.

[32] Clement, *Stromata, ed. cit.*, I, ch. 5, 306.

Secondly, the philosophers, in their zeal for the truth, are led to study not only Greek philosophy, but also the Jewish culture. Here they take possession of the foundations of truth and pursuing further, find life:

> And when they have embraced the foundation of truth, they receive in addition the power of advancing further to investigation. And thence they love to be learners, and aspiring after knowledge, haste to salvation.[33]

Thirdly, there are similarities in doctrine which will lead the Greeks to a more docile acceptance of Christianity. For example, one can find declarations that there is only one God in their philosophy. There are even descriptions of Christ Himself.[34]

The Greeks thus have in their culture an extremely helpful stepping-stone to Christianity. But the Christian also finds it an invaluable aid. One must not overrate its use. Philosophy is not indispensable. All can be Christian, whether young or old, wise or slow, Greek or Hebrew. Greek culture cannot produce Faith in anyone, while Christianity can stand alone. "But as we say that a man can be a believer without learning, so we also assert that it is impossible for a man without learning to comprehend the things which are declared in the Faith."[45] In other words, if the Christian really wants to penetrate the mysteries of his religion, if he wants to have the complete gnosis and not just a simple faith, then he must make use of the Greek culture.

Sacred Scripture itself is incomprehensible at times, without the aid of Greek dialectic, because there are many expressions in the Bible which are ambiguous. The unlearned man cannot decipher these, but armed with the Greek philosophy, he is able to explain and understand them. Clement concedes that the writers of these books did not know philosophy, but he explains that they had a direct inspiration from God, which others do not usually have. The reader, therefore, must use all the means that are available to him, including Greek learning.[36]

Moreover, the Greek philosophy brings a protection against the assaults of the sophists. The Christian will not worry about deceptive speech or erring pleasure. They will not shake him. He need not dread being opposed with cunning words, or being asked questions. He has the

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[3] *Ibid.*, VI, ch. 17. 516.
[34] *Ibid.*, VI, ch. 5, 490.
[35] *Ibid.*, I, ch. 6, 307.
[36] *Ibid.*, I, ch. 9, 310.

understanding necessary to answer questions, and to distinguish cunning words. By learning Greek philosophy the Christian has built the fence which will protect the vineyard of his Faith.

HANDMAID OF THEOLOGY

Because of the intrinsic value of this science, Clement baptized philosophy as the "handmaid of theology." This term, an echo of Philo, will be reiterated through the centuries in order to explain the relationship between the two sciences. Just as mathematics, astronomy, and all the other sciences contribute to the comprehension of the queen, philosophy, so this discipline in its turn becomes the servant and offers a learning which will help a man to appreciate the mysteries of the Christian religion.

Philosophy plays a role similar to that of the Egyptian servant Agar in her relation to Abraham and Sarah. Abraham was married to Sarah, but she remained sterile until he first begot a child through Agar. Abraham in this case is the man of faith, seeking understanding from the Christian religion, Sarah. He will not beget Isaac, that is, true wisdom, until he has first reaped the fruits of intercourse with philosophy (Agar). But at the same time, Clement never forgot that Agar was only the servant. It was finally Sarah who brought forth Isaac. No matter how valuable philosophy may be, it will always remain the substructure. If the Christian is to arrive at true wisdom, he must ultimately study the Scriptures. Rather than choose only what is profitable in secular culture, therefore, he must repeat the words of Abraham to Sarah: "Behold the maid is in thine hands: deal with her as it pleases thee." [Genesis 16:6][37]

In concluding, we have seen that there is only one wisdom, the supreme wisdom found in Jesus Christ. But just as many virtues go into making one happy man, so many things contribute to the assimilation of wisdom. Greek philosophy is one factor. It is a part of the whole truth, a species of the genus. It is a cooperating cause in the understanding of the divine truths.

With the coming of the Alexandrian school, philosophy has at last been given a place on the menu. It is only the dessert, and if one does not have the time or the capacity needed to learn it, then he should stick to the more important things. But it has a place, nevertheless. The bridge has finally been spanned. The dialogue may begin.

Thomas Cleator, O.P.

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[37] *Ibid.*, I, ch. 5, 305f.

AUGUSTINE AT CASSICIACUM

In the autumn of the year 370, at the age of seventeen, Augustine left his home in Tagaste and went to Carthage, capital of Roman Africa and one of the most influential cities of the Empire, to complete his education. His knowledge of philosophy was less than elementary. His was, rather, a literary education, concerned primarily with the art of oratory. The youthful Augustine delighted in the subtleties of grammar, in curiosities of natural history with which to amaze his listeners, in anecdotes of history or myth. It was an education considered opposed to philosophy, that "stern call" which dealt with truth and its meaning, disdaining pretty words and fine expression.[1]

In the course of his studies, however, Augustine came upon the *Hortensius* of Cicero. This "exhortation to philosophy" had a profound and lasting effect on his young mind and stirred up in him an incipient love of wisdom, thus prompting him to "begin that journey upwards" towards philosophy, which was to fructify in his conversion fourteen years later.

During these long fourteen years, his search for truth was muddled and only too human. Soon after reading the *Hortensius,* Augustine turned to the Scriptures, hoping to find there something comparable to the majesty and elegance of Cicero. Instead, his pride was repelled by their simplicity. Seeking a rational explanation of life not debased by faith, Augustine soon fell in with the heretical sect of the Manicheans.[2] This was in 373. During his Manichean years, Augustine graduated from pupil to professor of rhetoric, first at Tagaste, then at Carthage, and later at Rome. While at Rome, in 383, he abandoned the deceits of the followers of Mani and, becoming more and more convinced of the uncertainty of all things, was attracted by the convenient scepticism of the Academics.[3]

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[1] Henri Marrou, *Saint Augustine and His Influence Through the Ages* (New York: Harper and Brothers, 1957), p. 17.

[2] S. Augustine, *The Confessions,* III, 4-6, trans. F. J. Sheed (New York: Sheed and Ward, 1943).

Added to this tension in his life—a rhetorician by profession, yet strongly inclined to the philosophical life—were the calloused sears of the flesh. Augustine, a "slave to lust," had been living with a mistress since his seventeenth year.[4]

Remaining in Rome for only a short time, in the autumn of 384, Augustine began teaching rhetoric in Milan. These were the last years of Augustine the rhetorician. After years of uncertainty and hesitation, doubt and vacillation, after years of searching the valleys of darkness, Augustine was converted to Christianity. The prodigal son returned home.

The beautiful account of Augustine's conversion, its impact, its fullness, is best told in his own words:

> And suddenly I heard a voice from some nearby house, a boy's voice or a girl's voice, I do not know: but it was a sort of sing-song repeated again and again, 'Take and read, take and read' . . . So I was moved to return to the place where Alypius was sitting, for I had put down the Apostle's book there when I arose. I snatched it up, opened it and in silence read the passage upon which my eyes first fell: 'Not in rioting and drunkenness, not in chambering and impurities, not in contention and envy, but put ye on the Lord Jesus Christ and make not provision for the flesh and its concupiscences.' [Romans 13:13] I had no wish to read further and no need.[5]

This was the turning point of Augustine's life. We are able to distinguish in his conversion two principal aspects: religious and intellectual.[6] The conversion marked Augustine's firm resolution to enter the Catholic Church, to receive baptism.[7] Augustine's moral life was necessarily altered; he left his second mistress and completely gave up the idea of marrying. From an intellectual viewpoint, Augustine now devoted himself wholly to the pursuit of wisdom, to philosophy. He gave up teaching rhetoric and the worldly prestige and ambitions that went with his position. He cast off the scepticism of the Academy and turned to neo-Platonism.

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[3] *Ibid.*, V, 10.

[4] Cf. Marrou, *op. cit.*, p. 23.

[5] *Confessions*, VIII, 12.

[6] Henri-Irénée Marrou, *Saint Augustin et la Fin de la Culture Antique* (Paris: Editions E. de Boccard, 1958), fourth edition, p. 164f.

[7] A year later, at the age of thirty-two, Augustine was baptized at Milan by Saint Ambrose. Cf. *Confessions*, IX, 6.

The months ahead of him, from the autumn of 386 to the spring of 387, were to form the new Augustine. Not yet baptized, he began to study the great truths which had so long eluded him.

CASSICIACUM

It was the time of the Vintage Vacation. Verecundus, a close friend and colleague of Augustine at Milan, owned a villa some distance from the city. The place where the villa was located was called Cassiciacum. Verecundus offered it to the unbaptized convert as a place of retreat, where he might quietly retire to prepare himself carefully for his new life.

Besides his beloved mother, Monica, and his son, Adeodatus, by his first mistress, Augustine took with him to Cassiciacum several of his closest relatives and friends: Alypius, a former student of Augustine and the companion of his conversion;[8] Licentius, a young poet and the son of Augustine's patron, Romanianus;[9] Trygetius, another pupil of Augustine and a relative of Romanianus,[10] Lastidianus and Rusticus, two cousins of the convert;[11] and Navigius, whom Augustine calls his brother.[12]

The days at Cassiciacum were passed in many ways: in manual work at the villa, in reading some of the pagan authors—especially Virgil—, in reading Sacred Scripture, in private study and contemplation, in prayer, in friendly but serious conversations. This latter occupied a great deal of their time, and the fruit of these conversations has come down to us in the form of the well-known Dialogues of Cassiciacum.

There are four so-called Dialogues of Cassiciacum, written by Augustine during his stay at Verecundus's house in the country. They form the first of his writings after his conversion, his first extant writings, and, indeed, the groundwork for all that was to follow. In them Augustine outlines the scope of his life's work.

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[8] *Ibid.*, VI, 7; IX, 6.

[9] S. Augustine, *The Happy Life (De beata vita)*, I, 6, trans. Ludwig Schopp (*The Fathers of the Church* series, ed. Ludwig Schopp; New York: Cima Publishing Co., 1948).

[10] *Ibid.*

[11] *Ibid.*

[12] *Ibid.*

The first of the Dialogues to be completed, *De beata vita,* contains exuberant praise of philosophy and sketches man's journey to the happy life. Light and relaxed in tone, the *De beata vita,* says Augustine, is the result of a three days conversation on the occasion of his thirty-second birthday, 13 November 386, and is dedicated to his "great and noble friend," Flavius Manlius Theodore.

The *Contra academicos,* though begun before the *De beata vita,* was not actually completed until near the end of the retreat at Cassiciacum.[13] Now that Augustine has accepted Christianity, he devotes one of his first writings to a refutation of the arguments of the Academics, whose doctrine of scepticism had remained more or less prominent since the time of Carneades (214/3-129/8 B.C.), the founder of the New Academy. The *Academica* of Cicero (106-43 B.C.) was one of the primary sources for the teaching of the Academics and also served, partially, for Augustine's refutation of their teaching.[14] The convert wrote concerning this work:

> I wrote against them [the Academicians] first that I might put away from my mind with the strongest possible reasons their arguments, . . . because they used to have an influence also on me.[15]

The third of the Dialogues of Cassiciacum, *De ordine,* is a forceful statement against the Manicheans' basic tenet, namely, that there are two Gods, one of Good and one of Evil, to account for the dualism of good and evil which we notice in nature. In the *Retractationes* Augustine notes:

> At this time, in fact between those which were written about the Academics, I wrote also the two books *On order,* in which there is considered the important question: whether the order of divine providence embraces all things, good and evil.[16]

This work, like the others written at this time,[17] contains exaltent praise for philosophy: philosophy is "our true and tranquil abode,"[18]

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[13] S. Augustine, *Retractationes,* Migne, CSEL, 36, p. 18.

[14] Cf. S. Augustine, *Against the Academics (Contra Academicos),* trans. John J. O'Meara (Vol. 12, *Ancient Christian Writers* series, ed. Quasten and Plumpe; Westminster: Newman Press, 1950), introd., p. 14.

[15] *Retractationes,* Migne, CSEL, 36, p. 11.

[16] *Ibid.,* 588. CSEL, 36, p. 19.

[17] Cf. *De beata vita,* I, 1-2; and S. Augustine, *Answer to the Sceptics (Contra Academicos),* II, 1, 1; III, 2, 1, trans. Denis J. Kavanagh, O.S.A. *(The Fathers of the Church* series, *ed. cit.)*

[18] S. Augustine, *Divine Providence and the Problem of Evil (De ordine),* I, 3, 9, trans. Robert P. Russell, O.S.A. *(The Fathers of the Church* series, *ed. cit.).*

"the sacred inner courts."[19] It is "more beautiful than Thisbe, than Pyramus, than that Venus and Cupid, and all such loves of every kind."[20] Not only does this work laud philosophy, but it enunciates *in germine* the whole of Augustine's philosophical thought. "Although the subject of *order* constitutes the central theme of the entire dialogue, basically, at least, *De ordine* contains the elements of the entire Augustinian philosophy."[21]

Dedicated to Augustine's friend, Zenobius, *De ordine* has much in common with Plotinus' books on Providence[22] and on Fate,[23] yet it is not without much that is specifically Christian.

The last of these Dialogues is a dialogue between Augustine and himself, between the man and reason. Strictly speaking, then, it is not a dialogue at all, but a soliloquy, and the title of the work, *Soliloquia,* was invented by the author:

> Because we are speaking to ourselves alone, I chose to call it by the title of *Soliloquies,* a name which is, to be sure, a new one and perhaps an awkward one, but one which is quite suitable to indicate its purpose.[24]

It has been called "the most exalted and unquestionably the most unique [sic] of the dialogues composed at Cassiciacum."[25] It was the favorite, among the early Dialogues, of Augustine himself. In its two books he discourses on God and the soul, topics which constantly reappear in his later writings.

> The most sublime and beautiful passages of the *Soliloquia* are the prayers which are interspersed in the dialogue between Augustine and his Reason. Three times he pauses in the converse with his somewhat mysterious interlocutor to offer a prayer of adoration, praise, and supplication to God.[26]

THE RELIGIOUS ASPECT OF AUGUSTINE'S CONVERSION

> Look, I beseech Thee, upon Thy prodigal, O Lord, Kindest Father; already have I been punished enough; long enough have I served Thine enemies whom Thou hast beneath Thy feet; long enough have I been the plaything of deceits. Receive me Thy servant as I flee from them, for they took me in a stranger when I was fleeing from Thee.

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[19] *Ibid.,* I, 9, 31.

[20] *Ibid.,* I, 8, 21.

[21] *Ibid.,* introd., p. 231.

[22] Cf. Plotinus, *Enneads,* III, 2, 1-8; III, 3, 1-7.

[23] *Ibid.,* III, 1, 1-10.

[24] S. Augustine, *Soliloquies (Soliloquia),* II, 7, 14, trans. Thomas F. Gilligan, O.S.A. *(Fathers of the Church* series, *ed. cit.).*

[25] Sister M. Patricia Garvey, R.S.M., *Saint Augustine: Christian or Neo-Platonist?* (Milwaukee: Marquette University Press, 1939), p. 100.

[26] *Ibid,* p. 101.

> I realize I must return to Thee. Let Thy door be open to my knocking. Teach me how to come to Thee. Nothing else do I have but willingness. Naught else do I know save that fleeting and perishable things are to be spurned, certain and eternal things to be sought after. This I do, O Father, because this is all I know, but how am I to reach Thee I know not. Do Thou inspire me, show me, give me what I need for my journey.[27]

We have already noted that there are two distinct aspects discernible in Augustine's conversion: a religious aspect and an intellectual aspect. Though Augustine at Cassiciacum was a beginner in the Christian life, he was keenly aware that left to himself he was helpless, like a child alone on a busy street. He already realized that it was to God that he must turn for strength in the ways of Christianity, so different from the vain, self-centered deceivings of his previous life.

So it was that, daily upon arising, Augustine prayed to God for His blessing on the work of the day.[28] During that day much time was given to reading the Psalms, which affected him profoundly:

> What cries did I utter to You in these Psalms, and how was I inflamed towards You by them, and on fire to set them sounding through all the world, if I could, against the pride of men![29]

Frequently, too, he read the New Testament, wisely seeking first to search its heights and depths before exploring the more difficult passages of the Old Testament.

"Let us pray for what will make us virtuous and happy," said Augustine to the little band gathered at the villa with him.[30] Formerly his days were neither virtuous or happy, and now he often spent great parts of his day weeping and begging God to forgive him his many past sins, and to strengthen him in his journey towards the happy life.[31] Every evening the convert prayed and gave thanks for the abundant blessings of the day.[32]

THE INTELLECTUAL ASPECT OF AUGUSTINE'S CONVERSION

Augustine now begins in earnest the pursuit of wisdom. Though he is no longer a rhetorician, and is now able to devote himself seriously to philosophy, he is well aware that he is not yet a wise man; he is but a beginner on the road to truth. He calls himself "a child of philosophy."[33] The pursuit of wisdom is itself many-faceted. After his conversion, Augustine did not fail to recognize the necessity of prayer for the wise and, therefore, happy man. But it is perhaps more obvious, in reading the Dialogues of Cassiciacum, that Augustine firmly sets his foot on the path to truth intellectually, by metaphysical inquiry and meditation. This marks the beginning of Augustine's philosophical period, which extends to his ordination to the priesthood in the spring of 391.[34] The small community at Cassiciacum formed a "monastery of philosophers where the accent is put on intellectual endeavors."[35]

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[27] *Soliloquia*, I, 1, 5.
[28] *De ordine*, I, 8, 25.
[29] *Confessions*, IX, 4.
[30] *De ordine*, II, 20, 52.
[31] *Ibid.*, I, 10, 29.
[32] *Epistolae III-IV*, Migne, PL, 33, 65-66.

The Call to Philosophy

Not all men answer the call to philosophy in the same way; not all men receive the call in the same way, Augustine tells us in the first chapter of *De beata vita.*[36] He compares those who are called to philosophy with seafarers, and divides them into three classes.

The first group are like those travellers who have only a very short distance to go; a slight stroke of the oar will bring them to their destination. These men arrive at the port of philosophy with ease and at an early age embark on the happy life. The facility with which they reach their destination serves as a tempting invitation to others to join them quickly.

The second group has a more difficult time. They resemble those who are enticed by the apparent calm of the waters and, so, sail far astray from their destination. Often they forget entirely where they are going—the fair weather of temporal honors and pleasures beckons them, and the once desired port is forgotten. But then there comes some mishap, some crisis in their lives, some violent storm that carries them forcefully into the harbor of true peace.

There are those, finally, who though they may tarry on their journey, are always mindful of the pleasantness of their destination. Perhaps in their travels they were lured by false glitterings, detained by some obfuscating fog. Though they stray even for long periods, eventually some change in their fortune drives them into port, the peaceful port of philosophy.[37]

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[33] *De ordine,* I, 5, 13.

[34] Marrou, *St. Augustin et la Fin de la Culture Antique, ed. cit.,* p. 166f.

[35] ". . . un monastere de philosophes où l'accent est mis sur le travail intellectuel." (*Ibid*, p. 167).

[36] *De beata vita,* I, 1-2.

It is among these latter travellers that Augustine numbers himself. Ever since his nineteenth year, when he became enamored of the *Hortensius* of Cicero, he had been inflamed with an ardent love for philosophy. But there were, as we have noted, many obstacles which prevented him from embracing it at once; instead, he floundered about on the sea, sampling first this promising sect and then that one, until finally, after reading certain books of the Platonists and Holy Scripture, he found the fog which had surrounded him lifted.

Augustine's Notion of Philosophy

"You see, therefore, the philosophy on which I am sailing into port."[38] But the term *philosophy*, what is its meaning here in Augustine's writings at Cassiciacum? In the *De beata vita* he says:

> For after I had read only a few books of Plato[39] whom, as I learned, you are particularly fond of, I compared them, as well as I could, with the authority of those who have given us the tradition of the divine mysteries.[40]

And, again, in the *Contra Academicos* he says:

> But, behold! as soon as certain plenteous books . . . shed a very few tiny drops of most precious perfume on that diminutive flame, they at once enkindled in me such a conflagration that . . . I could scarcely believe it of myself. And, as if returning from a journey, I but beheld again—I avow it—that religion which had been implanted in us in our boyhood, and which had been, as it were, interwoven with the very marrow of our being. . . . I snatched up [the writings of] Paul the Apostle. For, I say, surely those men could not have accomplished such great things, and could not have lived in such a manner as they manifestly did live, if their writings and their reasons were in opposition with so great a good. I read the whole book with the greatest attention and care.[41]

It is evident from these texts, not indeed the only ones, that *philosophy*, as used here by Augustine, is not limited to the books of the Platonists which he had read, is not limited to the realm of reason; for it was only after reading these texts and *comparing them with Christian authority* that he was freed from the bonds which held him captive. It is both reason and authority which lead to truth. Philosophy includes both.

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[37] *Ibid.*, I, 2.

[38] *Ibid.*, I, 5.

[39] Some manuscripts read *Plotini* instead of *Platonis*. The correct reading is still controverted. Brief discussions of the two variants may be found in Schopp, *op. cit.*, p. 138, note 12, who reads *Platonis;* and in Garvey, *op. cit.*, p. 50, note 43, who reads *Plotini.*

[40] *De beata vita*, I, 4.

[41] *Contra Academicos*, II, 2, 5.

"With regard to the acquiring of knowledge, we are of necessity led in a twofold manner: by authority and reason."[42] For the uneducated the authority of honest men is usually the best guide, while for one who is educated, reason seems better adapted for the attaining of truth. Even for the instructed and educated, however, there are certain great truths which authority alone is able to discover.[43] Authority itself is both human and divine. That most solid and reliable authority is divine; but, human authority is also the source of much true and certain knowledge.[44]

Philosophy for Augustine, then, is not mere intellectual inquiry, mere cold reasoning. It is intimately connected with daily life, as a norm of life. It includes the notion of God as the Supreme Authority directing our actions and in Whom alone we can find perfect happiness.

The Object of Philosophy

To what will the true philosopher direct his study? In the first book of the *Soliloquia,* after Augustine utters that sublime opening prayer, he says: "I desire to know God and the soul." When Reason inquires what else he would know, Augustine replies: "Absolutely nothing."[45]

And so it is that in these Dialogues of Cassiciacum, and, indeed, throughout all his works, metaphysical research, the elaboration of his philosophy, occupies the leading position. Knowledge of God is the end he seeks; the means to that end, knowledge of the soul.[46]

> To philosophy pertains a twofold question: the first treats of the soul; the second, of God. The first makes us know ourselves; the second, our origin. The former is the more delightful to us; the latter, more precious. The former makes us fit for the happy life; the latter renders us happy. The first is for beginners; the latter for the well instructed.[47]

This concept of the object of philosophy affirms the realism of Augustinian thought even at this early period. Only faith can directly attain God; the soul is the only reality accessible to reason, and, in turn, elevates us to God.

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[42] *De ordine,* II, 9, 26.
[43] *Ibid.*
[44] *Ibid.*
[45] *Soliloquia,* I, 2, 7.
[46] Marrou, *St. Augustin et la Fin de la Culture Antique, ed. cit.,* p. 182f.
[47] *De ordine,* II, 18, 47.

It is interesting to note that study of the nature of the soul occupies a prominent position in the Cassiciacum writings and many other early writings of Augustine the beginner on the road of philosophy, Augustine still unskilled in the way of wisdom. "For", he says in the *De beata vita*, "up to now, in my mind the question of the soul is uncertain and changeable."[48] At Milan and Rome, in the years immediately after his baptism, he was to write the *De immortalitate animae*, the *De animae quantitate*, and the *De libero arbitrio*.

The Goal of Philosophy

No life is a happy one except insofar as it is lived in philosophy.[49] The pursuit of philosophy leads to the happy life. It is evident that true happiness cannot lie in worldly pleasures and vain honor, for whoever has these is in constant dread of losing them. Such a man, who dwells with fear, cannot be happy.[50] Happiness, rather, is found in wisdom. This wisdom is the possession of knowledge, of truth; it alone satiates our aspiration toward beatitude. It is the wisdom of the Son of God, the Way and the Truth.

"O God, ever the same: may I know myself, may I know Thee."[51] This is the prayer of Augustine the convert at Cassiciacum. And beyond this there is no more.

Celestin D. Weisser, O.P.

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[48] *De beata vita*, I, 5.
[49] *Contra Academicos*, II, 2, 4.
[50] *De beata vita*, II, 1; 11.
[51] *Soliloquia*, II, 1, 1.

ST. JEROME AND SECULAR LEARNING

Traditionally eight men have been singled out in the Church—four in the Greek Church of the East and four in the Latin Church of the West—as "Fathers of the Church." These men have received this title because they were outstanding for their doctrinal orthodoxy and sanctity of life; they were approved by the Church and they are of great antiquity.[1] Among the four in the Latin Church—Ambrose, Jerome, Augustine and Gregory the Great—Jerome is the most illustrious in the interpretation of Sacred Scripture.[2]

Although known primarily for his great commentaries and translations of the Sacred Writings, Jerome has set down his thought on a variety of subjects which are found interspersed in his biblical works. One such subject that has interested many scholars throughout those centuries following Jerome, has been his position on the study of the classical pagan authors and of pagan philosophy. The interpretation of his position has varied and is the foundation for much debate.[3]

Here we would like briefly to trace the life of this outstanding scholar pointing out a few of the things that make him one of the giants among early Christian writers. We will also include some discussion of his character and the times he lived in. All this will be directed to unraveling the more correct interpretation of the mind of St. Jerome on the value and dangers of the study of pagan literature and philosophy.

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[1] Etienne Gilson, *History of Christian Philosophy in the Middle Ages* (New York: Random House, 1955), p. 9.

[2] Prayer for the feast of St. Jerome, *Dominican Breviary* (Suarez edition, 1952), II, p. 986.

[3] For a modern discussion of this problem in relation to its influence in the Middle Ages, cf. G. G. Meersseman, " 'In libris gentilium non studeant', L'étude des classiques interdite aux clercs au moyen âge?," *Italia Medioevale E Umanistica* (Padova: Antenore, 1958), I, pp. 1-14.

HIS LIFE

St. Jerome was born about the year 342[4], at Stridon in Dalmatia in what is now Yugoslavia.[5] His family was wealthy and Christian so that he was reared in the faith from his very birth.[6] He was named Eusebius, after his father, and bore the family name Hieronymus. Often, in the ancient writings, we find the additional name, Sophronius, the significance of which is not clear, but which many think is a nickname.[7] We learn that he had a sister with whom he had a violent quarrel later in life, and also a brother, Paulinien, his close companion through life. His studies were begun at home and he showed increasing interest in them. Certain difficulties in studies during youth have been attributed to his delicate condition of health, which made him restless.[8] His studies took him to Rome at eighteen in the year 359, where he studied under the famous Roman grammarian, Donatus.[9] Undoubtedly, it was from him that Jerome learned to be the great master of Latin that he came to be. His studies included not only grammar and rhetoric but also philosophy. He became familiar with the *Isagoge* of Porphyry, the commentaries of Alexander of Aphrodisias on Aristotle, the *Dialogues* of Plato, and the *Opuscula* of Posidionius.[10] Of this period in his life, Jerome later tells us of the library which he began with great zeal and much work.[11] Here, too, in Rome, Jerome, surrounded by the wanton life of the city, fell into sin. He reproached himself for this during the rest of his life, and the memory of it was to be the cause of some of his greatest temptations.[12] Yet, despite this, after two years he received baptism from the pope himself. Sometime afterward, Jerome travelled to Aquila near Stridon, and it was while he was there that he made his decision to retire into the desert, there to live as a hermit. In the year 374, Jerome arrived at Antioch, and from there retired into the desert to do penance.[13] It is while in the desert that he learned

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[4] There is a current question concerning many of the traditional dates given for the events in the life of St. Jerome, but in this paper the dates given in Migne, *Sancti Eusebii Hieronymi Opera Omnia*, will be used.

[5] PL, *De Viris Illustribus*, 23, 719.

[6] PL 22, 737.

[7] Dominic Riviera, *Sancti Eusebii Hieronymi Vita*, in Migne, PL 22, 12.

[8] Ferdinand Cavallera, *Saint Jerome, Sa Vie et Son Oeuvre* (Louvain: Spicilegium Sacrum Lovaniense, 1922), I, p. 5.

[9] Riviera, *op. cit.*, 14.

[10] *Ibid.*, 15.

[11] Cavallera, *op. cit.*, I, p. 8.

[12] PL 22, 349.

[13] Riviera, *op. cit.*, 29.

Hebrew and improved his Greek.[14] The final preparations for his great work as a biblical scholar were complete. It was also, at this time, that he had his famous dream about pagan literature which we shall discuss at some length later in this paper.

Driven out of the desert by persecutions of the Christians, he journied to Constantinople where he studied under St. Gregory Nazianzenus and met St. Gregory of Nyssa. He made himself present at the first Council of Constantinople which was held in 381 and, shortly afterwards, he departed for Rome to attend a council there, at the request of the Pope.[15]

> We are ignorant of the role which Saint Jerome played at this Roman Council of 382, where the schism of Antioch occupied such a great place. Pope Damasus was not slow in appreciating him. He wished that he would collaborate intimately with him in the direction of the Church. The austerity of the life of the monk enhanced the esteem which his intellectual valor and his profound knowledge of ecclesiastical literature inspired.[16]

In view of this high regard, the Pope made Jerome his secretary to help him deal with affairs between the Churches of East and West. Because he was so well liked and so learned and of such great influence—many believed he was to be the next pope—many were the lies and plots fomented against him to prevent this. Finally in 385, in disgust he returned to the Holy Land to stay.

St. Jerome was accompanied on this return journey by some Roman women who had come to esteem him very highly during his stay in Rome.[17] Once back in the Holy Land, they settled in Bethlehem where Jerome supervised the establishment of the two monasteries, one for men and one for women.[18] Once settled, Jerome began to apply himself to the great biblical works for which he is so well-known. Working from the Greek text of the Septuagint and from numerous Hebrew texts, he undertook to translate the entire Bible into Latin. In 393 he published another important work, *De viris illustribus,* which was a treatment in chronological order of over 300 of the earliest Christian writers, thus giving to the world its sole source of knowledge of many early thinkers and their works. Of this work Cavallera says:

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[14] *Ibid.*

[15] R. P. Largent, *Saint Jerome* (Paris: Librairie Victor Lecoffre, 1922), p. 20.

[16] "Nous ignorons quel role joua saint Jerome a ce concile romain de 382, ou la question du schisme d'Antioche occupa tant de place. Le pape Damase ne tarda pas a l'apprécier. Il voulut qu'il collaborât intimemnet avec lui à la direction de l'Eglise. L'austérité de vie du moine rehaussait l'estime qu'inspiraient sa valeur intellectuelle et sa connaissance approfondie de la littérature ecclésiastique." (Cavallera, *op. cit.*, I, p. 75.)

[17] *Ibid.*, p. 123.

[18] *Ibid.*, p. 127.

> It has less merit because of its intrinsic worth than because it marks a date: it is the birth of the literary history of Christianity and also as the consecration of the existence of a Christian literature distinct from profane literature struggling to rival it in form, being infinitely superior to it in content.[19]

In this year, 393, the peaceful monastic life led by Jerome was interrupted by his involvement in the controversy about the doctrine of Origen. Jerome had long been an admirer of Origen and had often referred to his exegetical works while doing his own work on the Bible. At this time the errors which the works of Origen contained were pointed out to Jerome and after consideration he became convinced of their danger. The entire East became inflamed with controversy over the teachings of Origen, and the very nature of the case caused Jerome to take sides. In fact, he was forced to do so.[20] Both sides were adamant in supporting their views. Jerome, in the bitterness of the fight, lost what all Christendom considered one of the greatest Christian friendships—that with Rufinus, the companion of his youth.[21] The controversy over Origen, having reached a peak, became less a part of Jerome's life after 402.

It is at this same time that Jerome began his series of letters to St. Augustine. He also continued to write his commentaries on Scripture and to do some translating. In 416, the storm of heresy once again raged in the Holy Land interrupting Jerome's peace.[22] The Pelagian heretics were increasing in number and audacity; a group of them attacked Jerome's monastery, burning it and a great part of Jerome's library. Jerome soon rebuilt his home, where he remained until his death, probably about the 30th of September, 419.[23]

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[19] Il le meritaint moins pour sa valeur intrinseque que parce qu'il marque une date: c'est la naissance de l'histoire litteraire du Christianisme et comme la consecration de l'existence d'une litterature chretiene distincte de la litterature profane et s'efforcant de rivaliser avec elle pour la forme, tout en lui etant infiniment superieure pour le contentu." (*Ibid.,* p. 150.)

[20] *Ibid.,* p. 205.

[21] We cite the testimony of St. Augustine. PL 33, 245-250.

[22] Riviera, *op. cit.,* 172.

[23] Cavallera, *op. cit.,* I, p. 338.

HIS CHARACTER

Before attempting to give an interpretation of Jerome's statements concerning the study of pagan literature and philosophy, it is essential to have an understanding of the character of the man. The writings can never be divorced from the man, and the man often reveals himself in a special way in his writings, as with Jerome.

A good description of his character is summed up quite well by Cavallera:

> Restless, frolicsome, very sensitive, as quick to an explosion of anger as to a passionate outburst of gratitude and friendship, he is easily offended, excessively lively by nature, vindictive, quick to discern whims and to underline those of a biting kind. His spirit is very quick and his memory sharp. He shows an intellectual curiosity of a good kind. In spite of his sharpness, his heart is generous, accessible to high sentiments; an ideal place on earth would never be able to satisfy him. His complex nature offers uncommon resources for good as well as for evil.[24]

This character, so discernible even in his early youth, grows stronger as he matures. His intellectual curiosity is expressed in his devotion to study, his linguistic accomplishments, his biblical undertakings, his library, from early youth. His outbursts of anger and his vindictiveness fill his writings and life. As exampled by his exchange of letters with St. Augustine, it can clearly be seen that Jerome took every criticism of his writings as a personal affront.[25] Once his mind was made up on something, it became almost impossible to influence him to the contrary as witnessed by his stand in the Origenist controversy. Here he sacrificed his long and outstanding friendship with Rufinus rather than change in the least his convictions. The perversity of men struck at his ideals, and he was quick to react against them, as witnessed by his abandonment of Rome.[26] We should also especially note for our own purpose how extremely sensitive Jerome was, not only to criticism, as has been pointed out, but also to all those things which might infringe upon leading a good Christian life. Jerome's writings are full of his laments over his own youthful fall from virtue and the struggles with temptations with which he battled for so long. Warnings and admonitions appear frequently in Jerome's works.

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[24] "Remuant, espiegle, fort sensible, aussi prompt aux eclats de la colere qu'aux elans passionnes de la reconnaissance et de l'amitie, il est susceptible, ombrageux, vindicatif, habile a discerner les travers et a les souligner d'un trait mordant. Son esprit est tres vif et sa memorie tenace. Il manifeste une curiosite intellectuelle de bon augure. En depit de sa causticite, son coeur est genereux, accessible aux sentiments eleves; un ideal terre a terre ne pourra jamais lui suffire. Sa nature complexe offre pour le bien comme pour le mal des ressources peu communes." (*Ibid.*, I, p. 5.)

[25] Saint Augustine: *Letters* (Sister Wilfred Parsons, S.N.D., trans., New York: Fathers of the Church, Inc., 1951), p. xviii.

[26] "Ora autem ut de Babylone Jerosolymam regrediar, . . ." PL 22, 482.

We have felt the need to point up the irascibility, sincerity, idealism and the somewhat stubborn clinging to his opinions, as points especially to be kept in mind when we consider his philosophical position.

ROMAN EDUCATION

There yet remains one more consideration which must be introduced before directly discussing the question of his ideas on philosophy. Some space must be devoted to the nature of a Roman education at the time of St. Jerome.

Christianity thrust itself into a highly developed and complex Roman Empire which was hostile to it from the very beginning. All phases of life had been carefully considered and directed to provide for the best interests of pagan Imperial Rome. With the advent of the Empire, education had received a definite boost. The Caesars encouraged the development of the bilingual Latin-Greek culture and gave a certain dignity to teachers by making them all Roman citizens. The general course of studies which became standardized in the Empire, included grammar, logic, rhetoric, geometry, arithmetic, music, architecture and astronomy.[27] By the end of the first century of the Christian era, the schools of the Empire played the dominant role in the education of all youths.

Philosophy and the study of it were of another, but related, order. To these early Christians, and to all of the then civilized world, philosophy was more a way of life than a course of study. The search for truth in philosophy among the early converts to the faith such as Justin Martyr is an example of the role of philosophy at this time for the Christian. After the studies given in the Roman schools, which were basic and fundamental, a man would search out a teacher in one of the pagan philosophies and study under him so as to be able to adopt the philosophy as his way of life.[28]

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[27] Theodor Mommsen, *The History of Rome* (Glencoe: The Free Press), V, p. 449.

[28] Many men set up their own schools of philosophy in the Empire. Ammonius Saccas ran a famous school.

The advent of Christians within the Roman world was followed by extreme, wide-spread and long-lasting persecutions.[29] An education along the lines offered in pagan schools was felt among the Christians to be an extreme danger; but in the circumstances in which they found themselves, it was the only solution available because a good education was necessary to make a living.[30] Religious training, in general, was then deferred until later in life, or given mainly in the home.

The dangers of falling under the sway of the decadent moral theories offered at these pagan schools, as well as being misled through false intellectual curiosity to embrace one of the current pagan philosophical sects, were always lurking closeby. It is in the light of these facts, still unaltered by the time of Jerome, that his view on pagan literature and philosophy should be considered.

THE PROBLEM

The problem of whether or not the Christian should have a classical education—one that included the study of the pagan authors—and whether Christians should pursue the study of pagan philosophy was first met at this time. There was no simple solution. Some held that philosophy and the classics should be abandoned altogether, while others of a more liberal view saw some truth in them, and this made them of some value.

Later ages in trying to solve the same problem, pointed to the positions of the various authorities of the early Church, like St. Jerome, to support their own positions without much consideration of the circumstances of the early Church; and what was worse, without including the obvious qualifying statements also made by their sources.

In the light of the works of St. Jerome, his character and the background of the age in which he lived, we hope to show that the two principal passages in which he discusses this problem are such, that they do not lead to a conclusion that Jerome opposes classical studies and philosophy, but that he is aware of some danger involved and writes accordingly.

Let us first consider "the Dream" of St. Jerome which took place shortly after his arrival in the desert near Antioch. It is variously supposed to have taken place either during one of his sicknesses (according to an author who is trying to minimize its significance[31]) or to have occurred in ordinary sleep (according to another author who is trying to capitalize on its importance[32]).

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[29] W. Kane, S.J., *An Essay Toward a History of Education* (Chicago: Loyola University Press, 1938), p. 83.

[30] H. I. Marrou, *A History of Education in Antiquity*, George Lamb, trans., (New York: Sheed & Ward, 1956), p. 321.

Jerome's dream was of his being taken to heaven for judgment after his death. He appears before God Who asks him who is he. Jerome insists that he is a Christian while God says he is a Ciceronian. Whereupon, Jerome begs for the mercy of God, swearing that henceforth he will occupy himself only with the Sacred Scriptures and will no longer read the pagan authors.[33]

The reality of this event recorded by St. Jerome himself is not doubted by any author[34] of good standing, but the interpretations are certainly at odds. Gorce[35] is an example of that school of thought which has always held for the strict and literal meaning of the sentence which follows Jerome's own narration of the dream:

> From that day to the present, I have given myself to the study of theology with the same ardor as I had formerly given to profane studies.[36]

Certainly, it is not our purpose to deny any influence of this dream on the life of St. Jerome because, as we see from his own words, this is not so. Writing in his commentary on the Epistle to the Galatians, he notes that it has been fifteen years since his dream and the abandonment of pagan literature.[37] However, with Cavallera, we should like to take what appears to us to be the more reasonable stand. It is the one that fits in with what we find expressed in the very writings of Jerome after the occurrence of the dream.

It is on this very point that Rufinus and Jerome have one of their disagreements.[38] Rufinus, citing Jerome's statement in his commentary on the Epistle to the Galatians, says that this is a pure falsehood because the writings of Jerome breathe forth the spirit of Cicero in style; not only that, but his writings are full of quotations from the pagan authors.[39] Any examination of the writings of Jerome definitely shows that Rufinus was not exaggerating. In his letters to St. Augustine, for example, Jerome cites various pagan authors numerous times to prove his point or to illustrate what he means.[40]

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[31] Cavallera, *op. cit.*, I, p. 29.

[32] Denys Gorce, *La Lectio Divina* (Paris: Librairie Auguste Picard, 1925), I, p. 19.

[33] PL, 22, 416.

[34] Cavallera, *op. cit.*, II, p. 73.

[35] Gorce, *op. cit.*, I, p. 33.

[36] ". . . et tanto dehinc studio divina legisse, quanto non ante mortalia legeram." (PL, 22, 417.)

[37] Cavallera, *op. cit.*, I, p. 31.

[38] Gorce, *op. cit.*, I, p. 30.

It seems obvious that this passage is not intended to exclude the use or study of pagan authors in literature and philosophy. It would indeed be enough to show that Jerome does continue to make use of them. But there is a more positive argument. In the text of his letter, which also contains the text of the dream, we find just previous to the narration of the dream the statement of how he sought respite from his fasting by reading Cicero and other pagan authors.[41] With our knowledge of his character—sensitive to everything and very easily impressed—combined with his original intent of going into the desert to abandon all these things, it is easy to see how a conflict could arise within him about the use of pagan authors. The dream is the manifestation of this conflict. It is further evident to all writers on the subject that the most significant outcome of this dream is the beginning of his career as a biblical scholar. However, it is also quite evident from his works that he must have been motivated by a spirit similar to that of St. Justin Martyr, who taught that everything that is good in the writings of the pagans had been stolen from Moses, and since it is truth, it could be and should be used by the Christians.[42]

To complete our consideration of this problem, there is one other passage from his works that is often cited by those who use him as a source and authority in forbidding such studies—the *Letter to Damasus on the Parable of the Prodigal Son.*[43] In the discussion of pagan literature which arises in this letter, Jerome, without doubt, is extremely careful to point out that there is danger in such studies and that they should be approached with care. His attitude here is much more vigorous, and he goes on at some length giving arguments against such studies. At first reading, if one is not careful, it would be all too easy to conclude that this is Jerome's whole-hearted condemnation of these studies. Moved by his experiential knowledge of the frequent loss of faith from these studies, he involves himself at some length in showing the importance of caution in these studies. The reason for bringing the matter up is clearly stated in the last few lines of this section.[44] It is here that Jerome gives what the reason is, namely, that this is a warning to priests and religious. What is necessary and quite permissible for youths to study, is dangerous for clerics. It is wrong and dangerous because it takes them away from the study of sacred literature which they tend to abandon completely once they begin to read the pagans. The value of the study of literature and philosophy is stated in this passage most precisely: when we read the pagan philosophers we are to take what is true and convert it to our dogma and what is evil we are to leave behind.[45] This sentence coupled with Jerome's reference to the necessity of such studies for youths, as we have pointed out in our explanation of Roman education, is sufficient to clarify his position on the study of philosophy. He obviously was not in favor of stopping these studies, for he says that they are necessary for youths, and youths have to have teachers. His opinion seems more an invitation to such studies when we read of his admonition to take from them what is true.

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[39] PL, 21, 588.
[40] St. Augustine: *Letters, op. cit.*, pp. 318, 330, 362.
[41] PL, 22, 416.
[42] PG, 6, 265-268.
[43] PL, 22, 379.

CONCLUSION

It was the failure of many Christian scholars of the Middle Ages to make the distinction which St. Jerome himself makes about the study of the pagan authors which created an intellectual crisis for the civilized world. More and more the Augustinian and Franciscan schools, which were influential at this period, fought to oppose all non-Christian studies, which included the philosophers.[46] Time and time again, texts from the Fathers were cited out of context to support their views. It is precisely on the weight of those early Fathers as the great thinkers of the Church that these men of the Middle Ages held firm.

The drive against these philosophical studies was powerful, but it would be inconceivable to think that such studies totally disappeared. They were cultivated to some extent, but in the words of one author:

> . . . from the days of St. Jerome, religious men were wont to be a little sensitive, lest too great a love of the Latin orator should expose them to the charge of being a Ciceronian rather than a Christian student, . . .[47]

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[44] PL, 22, 386.

[45] PL, 22, 385.

[46] A. D. Sertillanges, O.P., *Saint Thomas Aquinas and His Work*, Godfrey Anstruther, O.P., trans., (London: Burns Oates & Washbourne Ltd., 1932), p. 4.

[47] Mother Francis Raphael Drane, *Christian Schools and Scholars* (London: Burns Oates & Washbourne, 1924), p. 336.

A course of studies based on the old Roman system was revived for the new universities and it would naturally lead to philosophy and bring forth men who longed to study it. St. Thomas, in his controversy over the study of Aristotle, was among those who showed anew the usefulness of these authors and their works.[48]

We have attempted in this paper to show that from the very beginning, the writings of the pagans, both literary and philosophical, were held in high regard by those of the "House of the Faith". St. Jerome, cited time and again as one of their chief opponents, we have shown to have been misunderstood and misquoted by men moved either by pride and stubbornness in their own views or by a false fear that philosophical studies would weaken the Faith. Repeatedly, the dangers inherent in such studies were magnified and the value to be obtained lost sight of completely. It is, therefore, false to maintain that St. Jerome was a leader among the opponents to such studies.

Owen Farrell, O.P.

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[48] Sertillanges, *op. cit.*, p. 65.

THE EARLY DOMINICANS AT OXFORD

It was at Dover, in early August, 1221, that Dominicans first set foot on English soil. Nicholas Trivet, a fourteenth century Dominican chronicler, relates:

> At the second general chapter of the Order of Friars Preachers which was held at Bologna under the Blessed Dominic, there were sent into England Friars Preachers to the number of thirteen, having as their Prior, Friar Gilbert of Fresney. In the company of the Venerable Father, Lord Peter des Roches, Bishop of Winchester, they reached Canterbury. After they had presented themselves to Lord Stephen, the Archbishop, and after he had understood that they were preachers, he immediately ordered Gilbert to preach before him in a certain church where he was himself to have preached that day. The prelate was so edified by the friar's sermon that henceforth during his episcopate he favored and promoted the Order and its work. Leaving Canterbury, the friars came to London on the feast of St. Lawrence [August 10], and finally reached Oxford on the feast of the Assumption of the glorious Virgin [August 15], to whose honor they built their oratory.[1]

The details of the journey are significant. The number of friars, thirteen, was one more than was necessary to constitute a priory. All previous foundations had been made by a handful of friars, who relied on new vocations to fill out the constitutional number of twelve for the establishment of a priory.[2] The first English Dominicans did not take advantage of Stephen Langton's friendly reception to establish themselves at Canterbury, the ecclesiastical center of England. They passed over the opportunity of a foundation at London, the commercial and political capitol of England. Instead, the whole group moved directly to Oxford, the country's intellectual center. In contrast, the Franciscans, who came to England three years later, separated, leaving five friars at Canterbury, two at London, and two at Oxford.[3]

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[1] "De secundo capitulo generali fratrum ordinis Praedicatorum, quod sub beato Dominico celebratum est Bononiae, hoc anno missi sunt fratres Praedicatores in Angliam, qui numero tredecim, habentes priorem fratrem Gilbertum de Fraxineto, in comitiva venerabilis patris domini Petri de Rupibus, Wintoniensis episcopi, Cantuariam pervenerunt: ubi cum se domino Stephano Cantuariensi archipraesuli praesentassent, audito quod Praedicatores essent, statim fratri Gilberto imposuit, ut coram se sermonem faceret in ecclesia quadam, in qua ipsemet proposuerat eodem die praedicare. Cujus verbis admodum aedificatus pontifex, toto suo tempore, religionem fratrum Praedicatorum et officium prosecutus est gratia et favore. Progredientes autem fratres de Cantuaria, venerunt Londonias in festo sancti Laurentii; et ulterius Oxoniam in festo Assumptionis Virginis gloriosae, in cuius honore oratorium construxerunt." Nicholas Trivet, *Annales Sex Regum Angliae*, 1136-1307, ed. T. Hog (London: English Historical Society, 1845), p. 209.

The actions of the Dominicans are readily understandable, if the friars had orders to erect, as the first establishment of the English Province, a fully constituted priory at Oxford. Study and learning have always occupied a unique place in the Dominican Order. The nature and purpose of the Order demand theologically trained preachers, and Oxford presented an ideal situation for fostering this aspect of the friar's life. For here were masters to teach them theology, so they, in turn, might teach others. The establishment of a priory at Oxford would insure the brethren's religious observance, their theological training, and the consolidation of their position in the university city. These must have been major considerations of Dominic and the Chapter at Bologna.

The popularity of the Dominicans spread quite rapidly. The Blackfriars[4] began attracting vocations as soon as they were established. Although new recruits did not come in great numbers at first, by the fourteenth century people were afraid to send their sons to Oxford, lest they join the Order.[5] By 1224, sufficient numbers had been trained that the friars were able to establish their second priory, at Holborn, in London.[6] Jordan of Saxony, who was visiting the first provincial chapter, in 1230, wrote concerning vocations: "At the studium at Oxford, where I am presently residing, the Lord has given us great hope of a good catch."[7] By 1249, there were some twenty-four Dominican convents established throughout England.[8] The friars were patronized by royalty, high ecclesiastics, and prominent citizens, as well as ordinary lay people. They were popular as preachers and confessors, and were frequently called upon to settle disputes. Both bishops and kings used Dominicans as their advisers, confessors, and diplomatic emissaries.[9]

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[2] Cf. W. A. Hinnebusch, *The Early English Friars Preachers* (Rome: Institutum Historicum FF. Praedicatorum, 1951), p. 9.

[3] Eccleston, *Tractatus Fratris Thomae de Eccleston De Adventu Fratrum Minorum in Angliam*, ed. A. G. Little (Paris: Collection d'études et de documents sur l'histoire religieuse et littéraire du moyen âge, t. VII, 1909), pp. 6-9.

[4] Outside their convents, the friars wore a black cloak and hood, which almost completely covered their white tunic and scapular. Hence the name "Blackfriars". Cf. Hinnebusch, *op. cit.*, p. 2, n. 4.

[5] Hinnebusch, *op. cit.*, p. 265.

[6] The first record we have of the convent is dated 1224, when Hubert de Burgh gave some property to the friars. "Monumenta Conventus S. Mariae et S. Ioannis Bapt. Londinensis," ed. R. Palmer, *A. O. P.*, III (1897-98), 286.

The earliest Constitutions provided that no priory was to be erected without a lector in theology.[10] All the brethren were obliged to hear the lectures, and outsiders were permitted to attend. Thus, each Dominican priory was also a school. It is presumable that the Blackfriars opened their schools soon after they came to Oxford. These schools, however, were not a part of the Oxford faculty. Only those classes taught by a master were recognized by the University. The first Dominicans probably came to Oxford as students, rather than teachers. The first date we can definitely assign to a Dominican master is 1234.[11] But the friars would surely have attempted to obtain a master before this time, more than ten years after their arrival. Whenever the schools were established, they were well received, and the friars maintained good relations with the University faculty until 1303, nearly a century after their arrival.[12] They were incorporated into the theological faculty, and the Dominican church was one of the places where the sermons and inceptions of masters of theology were held.[13]

John of St. Giles is credited by some historians with being the first Dominican master in theology at Oxford. This, however, is incorrect. Robert Bacon, O.P., was regent master by 1234,[14] while John of St.

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[7] "Apud studium Oxoniensis, ubi ad praesens eram, largam spem bonae capturae Dominus nobis dedit." Jordan of Saxony, "Ep. XVI," *Die Briefe Jordans von Sachsen*, ed. B. Altaner, cited in Dom David Knowles, *The Religious Orders in England* (Cambridge: University Press, 1950), p. 165.

[8] Hinnebusch, *op. cit.*, p. 58.

[9] *Ibid.*, pp. 165-9.

[10] *Constitutiones Antiquae Ordinis Fratrum Praedicatorum* (1228), Dist. II, § 23, ed. H. Denifle in *Archiv f. Lit.-u. Kirchengeschichte*, I (1885), 221.

[11] Pelster names Robert Bacon as master by 1224. Franz Pelster, "Die alteste Sentenzenkommentar aus den Oxforder Franziskanerschule," *Scholastik*, I (1926), 54-6.

[12] The Oxford Dominicans were involved in several serious disputes in the thirteenth century, but none of them were with the secular faculty involving the rights of the Dominicans. In 1252/3, a statute was passed which was unfavorable to the friars. Dispensations from the enactment, however, were readily granted to the friars, and no serious infringements on their rights and privileges were attempted until the following century. Cf. H. Rashdall, *Universities of Europe in the Middle Ages*, ed. F. M. Powicke and A. B. Emden (Oxford: Clarendon Press, 1936), III, pp. 67 ff. and Bede Jarrett, *The English Dominicans*, (New York: Benziger Brothers, 1921), pp. 76-81.

[13] Hinnebusch, *op cit.*, pp. 341-2.

[14] Pelster, *loc. cit.*

Giles was teaching theology in Toulouse at this date.[15] John did not return to England until 1235. Quétif-Échard states: "It is certain that he ruled our schools there [at Oxford] for many years. . . ."[16] The "schools" refers to the priory schools of the Blackfriars, not their chair of theology at Oxford. That John "ruled" the schools does not mean that he was regent master. He was well known for his knowledge of medicine and as a master in theology on the continent. By reason of his eminence, he may have been given charge of the friars' own schools. Since the Dominicans held only one chair at Oxford,[17] and Robert Bacon held this chair until 1244,[18] it is highly improbable that John of St. Giles ever was regent master at Oxford.

ROBERT BACON

As far as we know, Robert Bacon was the first regent master of the Dominicans at Oxford. Bacon,[19] an Englishman, probably studied under John of Abberyville, at Paris, about 1210, or later. By 1219, he was given a benefice at the Church of Lower Heyford, Oxfordshire. The documents indicate that he was already a master in arts. He resigned his benefice in 1227, perhaps with the idea of becoming a Dominican. During his years as a secular master, Bacon seems to have become acquainted with St. Edmund Rich, later Archbishop of Canterbury.[20]

Quétif-Échard dates Robert's reception into the Order at 1228,[21] though this may be too early. The first definite date we can assign to him as a Dominican is 1233.[22] From the language of Trivet, it seems that Bacon had resumed his chair and was again regent master when he entered the Dominicans.[23] Owing to his maturity, he was permitted to make profession at once, without passing through the year of novitiate.[24]

Robert's career as a Dominican centered around Oxford. In 1234, he was on a commission with Robert Grossteste and the University Chancellor to inquire into the morals of the University. There are legal documents connecting Bacon with apostolic work in the Oxford Jewry, dated 1236, January, 1242, and 1245.[25] In 1244, together with several other important persons, he was commissioned to witness an agreement between the University and King Henry III. It is probable that he was regent master in theology from the time he brought the chair to the Dominicans until Richard Fishacre incepted under him, about 1244.[26] After Fishacre's inception, Bacon continued his lectures in the priory schools, until his death, in 1248.

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[15] Quétif-Échard, *Scriptores Ordinis Praedicatorum,* (Paris: 1719), I, p. 100.

[16] "Certum ibidem annis pluribus scholas nostras publicas rexisse . . ." *ibid.*

[17] Pelster, "Das Leben und die Schriften des Dominikanerlehrers Richard Fishacre," *Zeitschrift für Katholisch Theologie,* LIV (1930), 521.

[18] A. B. Emden, *A Biographical Register of the University of Oxford to A. D. 1500* (Oxford: Clarendon Press, 1958), II, 685.

[19] Hinnebusch, *op. cit.,* pp. 361-2.

[20] *Ibid.,* pp. 446-7.

[21] Q. E., *op. cit*, I, p. 118.

[22] *Infra.*

[23] Trivet, *op. cit.,* p. 229.

[24] Eccleston, *op. cit.,* p. 81.

Robert Bacon's relations with the English royalty and hierarchy bear witness to the great respect with which he was held by his contemporaries. He was accustomed to preach in the royal court, before both king and bishops. In 1233, he preached a sermon in the presence of Henry III, in which he was so bold as to denounce Henry's intimate adviser, Peter des Roches, Bishop of Winchester.[27] In spite of this attack, Henry continued to call on Bacon for his services.

Bacon was undoubtedly a friend of Robert Grossteste, and he was closely associated with St. Edmund Rich, Archbishop of Canterbury (1234-40). He supplied much of the information on the life and virtues of the Saint, and was a member of the commission appointed for the canonization process in 1241.[28] Among Bacon's writings, Quétif-Échard lists a *Vita S. Edmundi Cantuariensis archiepiscopi*,[29] but his authorship of this work is questionable.

Besides the *Vita S. Edmundi*, Quétif-Échard mentions:

Glossas in plures Sacras Scripturae libros
Super Psalterium
Sermonum variorum summam
Lectiones ordinarias[30]

Only two works have been found that we may definitely attribute to Robert Bacon, a "Sermo de prima die Rogationis secundum Magistrum Robertum Bacum," and a *Commentary* on the Psalter. In the latter work,

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[25] Hinnebusch, *op. cit.*, p. 11, n. 36.

[26] Fr. Hinnebusch maintains that Bacon and Fishacre held chairs as regents simultaneously. (Hinnebusch, *op. cit.*, p. 364.) He bases his assumption on the statement of Trivet, "Ricardus de Fissakre . . . legens una cum fratre Roberto praedicto in scholis, . . ." (Trivet, *op. cit.*, p. 229.) Conditions at Oxford, however, seem to preclude this possibility. A. B. Emden points out that Trivet uses "legens", not "regens". (Emden, *loc. cit*)

[27] F. A. Gasquet, *Henry the Third and the Church* (London: George Bell & Sons, 1905), p. 136.

[28] Hinnebusch, *op. cit.*, pp. 446-47.

[29] Q. E., *loc, cit.*

[30] *Ibid.*

Bacon relies heavily on his Parisian master, John of Abbeyville. The interesting point about these writings is the use of colloquial expressions and concrete examples to illustrate the teaching. Father Vincent McNabb has named Robert Bacon the author of the *Ancren Riwle*, a rule for nuns.[31] The author of the *Riwle* frequently gives the meaning of Hebrew names. If Father McNabb's attribution is correct, we may conclude that, besides his theological learning, Robert had some familiarity with Hebrew, a somewhat unusual accomplishment for his time. He could have acquired this knowledge through his work with the Jews.

Bacon possessed a good mind and could grasp and clearly explain problems. He was, however, somewhat conservative in his thought. In contrast with his pupil, Richard Fishacre, he prefers the older custom of introducing theological questions into his scriptural commentaries. He was interested in Aristotle, but was wary of the Philosopher.[32] Bacon was more involved in practical matters than was Fishacre. Besides his work in the Jewry, he was interested in the liturgy, and was well acquainted with, and concerned over current moral problems in England.

RICHARD FISHACRE

Robert Bacon's illustrious disciple, Richard Fishacre, was the first Dominican to incept as master in theology at Oxford.[33] A native of Exeter, he assumed the regency about 1244, and held the chair until his death, in 1248.[34] Nothing more is known about his life.

Among his works, Trivet mentions a *Commentary* on the *Sentences* of Peter Lombard, and postills on the first seventy Psalms, ". . . very beautiful ones intermixted with the most agreeable maxims."[35] The latter work has not yet been found. A number of sermons, a sermon *exemplum*, and two questions, *De haeresibus*, and *De ascensione Christi*, are still extant. Several other works are attributed to Fishacre. It is interesting that one of these is a *Quodlibeta*.[36] Only the best masters were willing to answer the *quaestiones disputatae de quolibet*.

There are numerous extant manuscripts of Fishacre's *Commentary* on the *Sentences*. It was written before 1245, and is the first from the pen of an Oxford Dominican, perhaps even the first from any Oxford master. It is the first Oxford commentary to introduce Aristotle into theological speculation.[37]

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[31] Vincent McNabb, "The Authorship of the *Ancren Riwle*," *Arch. Frat. Praed.*, IV (1934), 49-74.

[32] Hinnebusch, *op. cit.*, p. 363.

[33] Trivet, *loc. cit.*

[34] A. B. Emden, *loc. cit.*

[35] ". . . pulcherrimas moralitatibus suavissimis intermixtas." Trivet, *op. cit.*, 230.

[36] On Fishacre's writings, cf. Pelster, "Das Leben und die Schriften des Dominikanerlehrers Richard Fishacre," *loc. cit.*, pp. 518-53.

Compared with contemporaries, Fishacre manifests a remarkably wide acquaintance with the new learning. He frequently quotes the *De animalibus* and the *De anima;* he knows Book VII of the *Metaphysics,* Plato's *Timaeus,* Avicenna, Avicebrol, Averroes, and is familiar with medical matters. On one occasion he prefers the opinion of Aristotle to the Master of the *Sentences,* and places the Philosopher on the same plane as St. Augustine.[38]

It should not be thought, however, that Fishacre was a thoroughgoing Aristotelian. On fundamental issues he accepts the Augustinian tradition. He teaches the doctrine of *rationes seminales* and the hylomorphic composition of angels. He gives and rejects three opinions on the problem of unity or plurality of forms. He does not commit himself to any position, but tends to the plurality of forms. He gives ten arguments for the existence of God, including Anselm's ontological proof. Nevertheless, Richard was influenced by Aristotle. His last proof for God's existence is based on the impossibility of an infinite regress of efficient causes. He denies that man has an intuitive knowledge of self, and explains the reasoning process by which we acquire this knowledge.[39] Fishacre was an original thinker, and may have been the first Western theologian for whom infinity was a perfection of the divine reality itself.[40]

Fishacre's *Commentary* was widely circulated, and it influenced thinkers at Paris as well as at Oxford. Thomas Aquinas desired and eventually obtained a copy of the work.[41] It influenced the Franciscans, Richard Rufus of Cornwall and St. Bonaventure; the Dominicans, Albert the Great, Peter of Tarentaise, Simon of Hinton, and Robert Kilwardby. The adversary of the mendicants, Gerard d' Abbeville, possessed a copy.[42] Fishacre's influence was not limited to theologians. R. de Stanington's commentaries on the *Physics, De caelo et mundo, De generatione et corruptione, Meteora, and De anima* follow Fishacre in the statement of problems, the line of argument, and the conclusions. Several paragraphs of the *Commentary* are quoted almost verbatim.[43]

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[37] D. A. Callus, "Introduction of Aristotelian Learning to Oxford," *Proceedings of the British Academy,* XXIX (1943), 32.

[38] *Ibid.*

[39] D. E. Sharp, "The Philosophy of Richard Fishacre," *New Scholasticism,* VII (1933), 281-297.

[40] L. Sweeney and C. J. Ermatinger, "Divine Infinity according to Richard Fishacre," *Modern Schoolman,* XXVX (1957-59), 191-212.

[41] Q. E., *loc. cit.*

[42] Hinnebusch, *op. cit.,* p. 368.

CONCLUSION

Historians have been prone to underrate the role of the English Dominicans in the intellectual life of the middle ages. Dom David Knowles states that the Blackfriars "were somewhat less active in the Universities. . . . At both Universities the Minors took the lead in development . . . the Minors excelled in speculative theology. . . ."[44] Dominicans such as Robert Bacon, Richard Fishacre, Simon Hinton, Robert Kilwardby, Richard Knapwell, and Thomas Sutton, however, cannot be overlooked in the history of English scholasticism. The impact of Dominicans on contemporaries is indicated by the report of Matthew Paris, who certainly wasted no love on the friars. In his eulogy of Bacon and Fishacre he writes:

> And in the same year [1248] two brethren from the Order, who, it is believed, were not surpassed nor even equalled in theology and the other sciences by anyone living, namely friar Robert Bacon and friar Richard Fishacre, who taught for many years in the same faculty and gloriously preached the word of the Lord to the people, returned to God from this world.[45]

That the illustrious Robert Grossteste was still living at the time makes this testimony the more striking. Pelster does not hesitate to rank Richard Fishacre, O.P., with Grossteste in his influence on the development of Oxford.[46]

The early Dominicans have left a far greater volume of extant works than their contemporary Franciscans. In the history of thought, the thirteenth century Blackfriars cannot be ranked below the Friars Minor. As Beryl Smalley remarks, "The real intellectual backwardness must be ascribed to the historians of the Friars Preacher."[47]

Alphonsus Heyl, O.P.

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[43] Callus, *op. cit.*, p. 33.

[44] Knowles, *op. cit.*, pp. 160, 161, 166.

[45] "Et eodem anno duos fratres de eodem ordine, quibus non erat maiores, immo nec pares, ut creditur, viventes, in theologia et aliis scientiis, videlicet frater Robertus Bacun et frater Ricardus de Fishakele, qui egregie plurimis annis in eodem facultate legerunt et populis gloriose praedicaverunt verbum Domini, ab hoc saeculo ad Deum migraverunt." Matthew of Paris, *Chronica Maiora*, ed. Luard (Rolls Series), V, (London: 1880), 16, cited by Pelster, "Das Leben . . .," *loc. cit.*, p. 519.

[46] Pelster, "T. V. Sutton u. d. Correctorium," *Mélange Pelzer*, p. 466, cited by Hinnebusch, *op. cit.*, p. 369.

[47] Beryl Smalley, review of Dom David Knowles' *Religious Orders in England, Dominican Studies,* II, (1949), 61.

ROGER BACON: DOCTOR MIRABILIS or INNOVATOR NOVITATUM SUSPECTARUM

In the remarkable intellectual ferment which occurred in the Franciscan Order during the medieval period of its history three significant types of thinkers can be discerned. In the first place there are the doctors, magnificent men, eminent as much for holiness of life as for brilliance of intellect. This is the class to which men like Alexander of Hales, St. Bonaventure, and Duns Scotus, to name only three, belong.

At the opposite end of the scale from the doctors is a second type of thinker who, having gone awry in some fundamental principle, finally ends in very grave intellectual confusion and, often enough, in moral disorder as well. Inevitable in any human society, this type found Franciscan representatives in such unfortunate men as Elias of Cortona, Gerard di Borgo San Domino, and it would seem, William of Ockham.[1]

There is finally a third kind of thinker, not so easily described, to be found among the medieval Franciscans. This type is made up of men who are clearly of a different stamp from the theological and philosophical firebrands of the second group. Nevertheless, at some time in their lives, they have met with serious ecclesiastical censure; and this not without some appearance of justice to cause one to take pause. Most famous among the Franciscans in this class is the English friar, Roger Bacon.

With the exception of St. Francis himself Bacon is perhaps the most celebrated Franciscan of his period. In part because of his real and imagined difficulties with the disciplinary *magisterium* of the Church, in part because of his supposed "modern anticipations," Bacon, much like his Dominican counterpart, Girolamo Savonarola, has long commanded a widespread and enthusiastic appreciation even among non-Catholics. A typical example of this admiration among those outside the Church can be seen in the statement of the encyclopedist, George Sarton, who in comparing Bacon to St. Thomas observes:

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[1] The extent of Elias' intellectual activity is conjectural. *Vide,* however, Paschal Robinson, "Elias of Cortona," *Catholic Encyclopedia* (1st ed.), V, p. 384; on Gerard di Borgo San Donino *vide* Stewart C. Easton, *Roger Bacon and His Search for a Universal Science* (New York: Columbia University Press, 1952), pp. 132-134, 136; on William of Ockham *vide* Albert Judy, O.P., "William of Ockham and his Doctrine of Supposition," *Reality,* VIII (1960), 43-45.

> St. Thomas founded a school, almost comparable in size and influence to the Academy and the Lyceum; Bacon founded none, but the majority of modern scientists feel more genuinely attracted to him than to any other mediaeval personality.[2]

The appreciation of Bacon is not, however, limited to those outside the Church. Catholic circles have long taken some pride in claiming Bacon as one of their own. Quite fittingly the most extensive and intelligent hearing which has been accorded Bacon by those in the Church has come from his confrères in the Franciscan Order.[3]

Nevertheless, there is little doubt that Bacon was found guilty of doctrinal charges serious enough to confine him to prison probably for at least ten years. Jerome of Ascoli, Minister General of the Franciscans at the time of Bacon's condemnation and later Pope Nicholas IV, was so disturbed by Bacon's alleged deviation that he sought papal assistance in suppressing its spread.[4] The very limited influence exerted by Bacon on later thinkers coupled with the almost complete lack of Baconian incunabula suggest that Jerome's concern was shared by enough of the authorities of his time to insure that Bacon's doctrinal condemnation did not remain a mere formality.[5]

The question then does arise. Was Roger Bacon the *doctor mirabilis* his admirers claim or was he rather, as his judges made clear was their opinion, a renegade perpetrator of *novitates suspectas*.[6] Although we certainly do not intend to imply any necessary opposition between a man of deep learning and one who has at some time been condemned by an ecclesiastical court, and although we admit from the beginning that we will be surprised if Bacon does not turn out to be in some way deserving of the widespread esteem he now commands, the question posed does seem to be legitimate, at least as a dialectical instrument for the investigation of the life and doctrine of this remarkable Franciscan.

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[2] George Sarton, *Introduction to the History of Science* (Baltimore: Williams and Wilkins Co., 1931), II, part II, p. 954.

[3] Chief among these are G. Delorme, "Roger Bacon," *Dictionnaire de Theologie Catholique* (1st ed.), II*, pp. 7-31; Theophilus Witzel, "Roger Bacon," *Catholic Encyclopedia* (1st ed.), XIII, pp. 111-116; C. B. Vanderwalle, *Roger Bacon et l'histoire de la philologie* (Paris: 1929); and Theodore Crowley, *Roger Bacon: The Problem of the Soul in his Philosophical Commentaries* (Louvain and Dublin: 1950).

[4] Easton, *op. cit.*, p. 192.

[5] *Ibid.*, p. 199.

[6] *Chronica XXIV, Generalium Ordinis Minorum* as quoted in Henry Osborn Taylor, *The Medieval Mind* (New York: The Macmillan Co., 1919), II, p. 520.

LIFE AND WORKS

Were it not for the considerable number of personal references contained in his own writings we would know virtually nothing about the career of Bacon. As it is we know little enough. He was certainly born in England, probably in Ilcester of Somerset, about 1214. His family was wealthy and probably noble. However, in the civil war between the barons and Henry III (c. 1250) the Bacons supported the royal party, and thereby, upon the triumph of the barons, lost the bulk of the family fortune.[7]

Bacon became a master of arts at Oxford. We are not sure under whom he studied. That he studied at this time under Robert Grosseteste, a thinker for whom Bacon always expresses the highest regard and by whom he is much influenced, seems quite impossible.[8] The curriculum at Oxford during Bacon's stay there as an undergraduate was, we may reasonably conjecture, the usual grammar, rhetoric, and logic (including by now the *Posterior Analytics*) of the *trivium* plus the various sciences of the *quadrivium* (likewise enriched by this time, in all likelihood, by the very controversial *Libri naturales* and *Metaphysica* of Aristotle).

Probably before but certainly by 1245 Bacon was in Paris at the University where he exercised the office of *magister regens* in the faculty of arts.[9] He read Aristotle. It has been suggested that Bacon may well have been one of the first to teach the newly reintroduced *Libri naturales* and *Metaphysica* at the University.[10] Be that as it may, Bacon's first writings, which date from this first Parisian period, are nearly wholly devoted to *Quaestiones* on these Aristotelian works. In contrast to the straight expository style of many of his later writings these *Quaestiones* are written in a formal scholastic manner. They seem to be rather direct reports of actual classroom discussion in which occasionally Bacon even seems to change his position on the question at point.[11]

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[7] Easton, *op. cit.*, pp. 9-11.

[8] *Ibid.*, p. 23.

[9] Etienne Gilson, *History of Christian Philosophy in the Middle Ages* (New York: Random House, 1955), p. 294.

[10] As is well known, the ecclesiastical authorities at Paris, fearful of the possible dangers to the faith in Aristotle, especially in the matter of the eternity of the world and the pantheistic identification of God and prime matter (read into Aristotle by David of Dinant and Amaury of Bène), had proscribed the reading of Aristotle's *Libri naturales* and *Metaphysica*. The first proscription was issued in 1210. It was not until c. 1234 that the proscription was substantially removed. During the twenty odd years of the Parisian proscription Oxford freely continued to teach the *Libri naturales* and the *Metaphysica*. Bacon as a young graduate from Oxford would be in a good position to begin lecturing on the suppressed Aristotelian books once they began to appear again in the curriculum at Paris. *Vide* Easton, *op. cit.*, pp. 35-45.

A number of writers on Bacon have assumed that while he was at Paris he became a master in theology, but there is no evidence for this. We have no *Commentarium* either on the *Sentences* or on the Bible from Bacon. In fact all of his writings, except one of his last, the *Compendium studii theologiae,* are clearly only philosophical, at least in format.[12] Moreover, if we take it that Bacon was not a master in theology, we can more easily understand a characteristic in his writing which might otherwise mislead us. This characteristic, which appears persistently throughout much of Bacon's thought, is the sharp note of criticism which he directs against numerous particulars in the theologically dominated educational setup of his day.

It was, of course, quite beyond Bacon's purpose to oppose the ordering of all knowledge to the sacred science of theology. He often insists that all of his own writings are so ordered.[13] Nevertheless, a master in arts, an outsider, would certainly find it easy to criticize any number of things in the theological curriculum as it was actually carried out; and this is what Bacon did at great length. It only confirms our thesis, moreover, to learn that what Bacon dislikes most is that the theologians do not study the arts thoroughly enough, especially the languages and mathematics.

Having touched on Bacon's tendency towards criticism in the realm of theology, we must not pass on without noting that his critical bent was not limited to this area. As a matter of fact a pronounced discomforture with the *status quo* of nearly everything upon which he came is one of the most characteristic traits of Bacon's whole makeup. It is rather anomolous and perhaps instructive that this master in arts, whose life covered almost the entire span of what many have considered the greatest century in Western history, should still find himself so thoroughly dissatisfied with his surroundings. He is in despair over the moral tone of the times. Students are lazy and foolish. The papal curia is full of the corrupt. Things are so bad, in fact, that the anti-Christ himself seems imminent.[14] On the intellectual plane the situation is not much better. Bacon is distressed to see that, in addition to approaching the subject with insufficient preparation in the arts, masters in theology, instead of really theologizing, are spending all their time on what are essentially trivial philosophical problems. They are more concerned with the *Sentences* than the Bible. Small wonder, since the text of the Bible used at Paris is so corrupt that its value is very seriously compromised.[15]

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[11] Easton, *op. cit.,* pp. 59-61, 64-66.

[12] For a bibliography of the known works of Bacon *vide* A. G. Little, "Roger Bacon's Works," *Roger Bacon Commemoration Essays* (Oxford: Clarendon Press, 1914), pp. 375-425; *vide* the corrections to the bibliography in Easton, *op. cit., passim* and Gilson, *op. cit.,* pp. 673-674. The difficulties in constructing an adequate bibliography of Bacon's works are very great. He, very practically, often incorporated parts of earlier works into his later works. For this reason it is almost impossible to tell whether a given manuscript contains a separate work or part of a larger work.

[13] Gilson, *op. cit.,* p. 299.

Bacon's criticisms continue at length. Some are well taken. Sanely understood, Bacon's criticism of the theological speculation and pre-theological formation of his time is often perceptive enough to be useful even today. On the other hand much of what Bacon has to offer in criticism is less than temperate. Bacon's concern, for instance, for a more thorough education for theologians in the liberal arts was so overweening that he even proposed that the future divines be made to master the fine art of dancing.[16] Such a proposal is, it must be admitted, whimsically extravagant. Likewise one cannot but suspect that Bacon is indulging in sheer braggadocio when he claims that he is able to distinguish no less than "thirty-two basic errors with infinite ramifications" in one branch of the art of medicine as it was currently practiced. One need not hold any brief for the admittedly primitive state of medieval medicine if he is sceptical whether Bacon could ever make good such a claim, starting from the astrological and alchemical hodge-podge which formed the basis of his own medical knowledge. But this is to anticipate. At the time of his first Parisian period Bacon's writings were too technical to allow for any of the free wheeling criticism in which he later engaged.

After teaching Aristotle for a number of years at Paris Bacon apparently sometime around 1250 underwent a deep crisis in his whole manner of life. We know that for ten years, from 1256 until 1266, he was so ill that he could not teach. Evidently during this physical crisis he returned to Oxford where he underwent something of an intellectual crisis as well. The writings from this period become much less nature centered than his earlier Aristotelian commentaries and far more dominated by the notion of mathematical investigation of things.[17]

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[14] Easton, *op. cit.*, pp. 28-29, 136-137, 190, *et passim.*

[15] *Ibid.*, pp. 33 n., 210-219.

[16] Quoted without reference in E. Withington, "Roger Bacon and Medicine," *Roger Bacon Commemoration Essays, ed. cit.*, p. 347.

It is likely that Bacon had himself in mind when he wrote that many had begun to despair of ever learning or understanding nature through Aristotle, and that they turned instead to other writers such as Pliny and Seneca.[18] Perhaps Pliny and Seneca had something to do with Bacon's transformation. We may be sure, however, that people like Robert Grosseteste, Robert Kilwardby, and Adam Marsh had fully as much to do with Bacon's newfound mathematicism as did the ancient Romans. These three luminaries, whose influence on Bacon is apparent at every turn, were only the current representatives of an old Oxonian tradition. In contrast to the more metaphysical interests which flourished at Paris, this tradition inclined to a more positivistic or experimental approach to nature based on a deeply ingrained mathematical Platonism.[19]

In addition to a more mathematical approach to nature Bacon's intellectual outlook underwent a further change in that it now became intensely practical. He turns from the high flown investigation of matter and form, and essences and being, to the more mundane problems of calendar reform and Greek and Hebrew grammar. Bacon's practical bent, however, not only led him to the mundane sciences of chronology and philology, it also brought him to the exotic sciences of astrology and alchemy. These sciences were, for him, eminently practical particularly in the realm of medicine. If one knew, for instance, the alchemical formula for the philosopher's egg, one could do a great deal to retard the "accidents of old age."[20]

The books attributed to Bacon which would seem to date from this period are very numerous. Besides the alchemical, medical, and astrological works, they include the important *De multiplicatione specierum,* in which Bacon elaborates a very interesting mathematical description of the laws of the propagation of force; and the *De mirabili potestate artae et naturae,* in which there is developed a treatment of various marvelous machines and engines which an enlightened technology might produce. As a matter of fact later technology did produce a good many machines which are strikingly like those Bacon describes.[21]

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[17] Guillermo Fraile, *Historia de la Filosofia* (Madrid: Biblioteca de Autores Christianos, 1960), p. 800.

[18] Gilson, *op. cit.*, p. 300.

[19] *Ibid.*, pp. 260-261; James A. Weisheipl, O.P., "Albertus Magnus and the Oxford Platonists," *Proceedings of the American Catholic Philosophical Association,* XXXII (1958), 131-136. On Robert Kilwardby, Archbishop of Canterbury, Dominican, party in the anti-Thomistic condemnations of 1277, *vide* Gilson, *op. cit.*, pp. 355-359; on Adam Marsh, first Franciscan master of theology at Oxford, disciple of Grosseteste, *vide* Easton, *op. cit.*, p. 94. At present we have only Bacon's word for the influence exercised on him by Adam Marsh since Marsh's works have not yet been identified.

[20] M. M. Pattison Muir, "Roger Bacon: His Relations to Alchemy and Chemistry," *Roger Bacon Commemoration Essays, ed. cit.*, p. 293. One of Bacon's more popular alchemical works is entitled *De retardandis senectutis accidentibus et de sensibus conservandis.* Little, *op. cit.*, p. 399.

Bacon's crisis seems to have issued in a moral as well as an intellectual change since it is apparently at the end of this second period at Oxford that he joined the Friars Minor. From the beginning his relations with his order were none too happy. He complains in typical fashion that, "they forced me with unspeakable violence to obey their will."[22] It seems rather unfair, however, to suggest that Bacon was not a sincere religious. The proposal sometimes put forth that his entrance into the Franciscans was mainly dictated by the thought of using the order as a support for his own intellectual pursuits seems to be less than just to Bacon's intentions.

At any rate, clothed now in the Franciscan habit, Bacon was soon back in Paris. He continued to be picqued by the lack of attention given to a man of his accomplishments by the superiors in his order. In 1266, however, one of the more curious incidents in Western intellectual history worked to accord Bacon some of the acknowledgment he felt he deserved. In the year previous Guy Foulques, an old acquaintance of Bacon from his earlier days in Paris, ascended the papal throne as Clement IV. Foulques, apparently while he was still only a cardinal, had once requested, no doubt at Bacon's own urging, that his English acquaintance write him a treatise on the nature and cure of the evils that were then plaguing the Christian world. (Evidently by this time Bacon's critical sense had been activated.) It was in answer to this second request that Bacon wrote his three best known works, the *Opus majus,* the *Opus minus,* and the *Opus tertium.*

The exact relation of these three works is under some dispute. Everybody agrees, however, that the *Opus minus* and the *Opus tertium* are only extended summaries of the *Opus majus* plus a number of astrological and alchemical addenda.[23] The *Opus majus* itself is divided into seven books on (1) the general causes of human ignorance, (2) the connexion of philosophy and theology, (3) the utility of languages, (4) the utility of mathematics, (5) optics, (6) experimental science, and (7) moral philosophy.

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[21] On the *De multiplicatione specierum, vide* Gilson, *op. cit.,* pp. 300-301; among the technological anticipations listed in the *De mirabili potestate artae et naturae* are self propelling boats, automobiles, airplanes, and telescopes. *Vide* Taylor, *op. cit.,* p. 538.

[22] Roger Bacon, *Opus Tertium,* c. iii (ed. J. S. Brewer, *Fratris Rogeri Baconis Opera Inedita,* 1859, p. 15, 11.12-13); as quoted in Easton, *op. cit.,* p. 122.

These great *Opera* are the most quoted sources in Baconian research. Undoubtedly they do contain the seeds of all Bacon's thought. Nevertheless, Bacon never intended them as complete expositions of his thought on the sciences involved. After all, they were written to be read by a reigning pontiff, who would hardly have the time to go through a *Summa* of all Bacon's philosophical knowledge. This would explain in large part, incidentally, why Bacon, fearing that the *Opus majus* was too long for the busy Pope to read, felt it necessary to compile his summaries in the *Opus minus* and *Opus tertium.*

Bacon did, however, plan what he called an *Opus principale,* a complete exposition of all philosophy. It is possible that the *Communia naturalia,* the *Communia mathematica,* and the *Compendium studii philosophiae,* all written after the *Opera,* plus the *De multiplicatione specierum* written before the *Opera,* were all intended by Bacon to form parts of his never completed *Opus principale.* In the period after the writing of the *Opus majus* and its companion works Bacon also wrote his *Grammars* for the study of Greek and Hebrew, both of which were something of a pioneer effort in their field.[24]

Bacon's favor in high places lasted only a short time. Clement IV, after a brief reign as pontiff, died in 1268. Bacon's personal fortunes were soon to become catastrophic. Some time in 1278 he was called before a court of his order. His doctrine was condemned, "on account of certain suspect novelties," and Bacon himself was cast into prison.[25]

There has, of course, been much speculation on why Bacon was imprisoned. Some have suggested that it was due to the intemperate attacks he had unleashed on his contemporaries. Their thought is that Bacon's victims, through the cooperation of Jerome of Ascoli, turned on their attacker and finally wreaked vengeance by arranging for his imprisonment. This explanation fails to account for the fact that Bacon was condemned on doctrinal charges, although it is possible that the doctrinal charges were just a cover up for other grievances of his accusers.

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[23] *Ibid.,* pp. 144-166.

[24] S. A. Hirsch, "Roger Bacon and Philosophy," *Roger Bacon Commemoration Essays, ed. cit.,* pp. 101-151.

[25] It is true that our knowledge of this event is based solely on the authority of the *Chronica XXIV, Generalium Ordinis Minorum,* a document, we are told by Delorme (*op. cit.,* p. 10), which on other matters is very untrustworthy. As Sarton (*op. cit.,* p. 953) points out, however, we have no evidence at all to contradict the statement of the *Chronica,* and no other explanation for Bacon's whereabouts at this period has ever been proposed.

Others have thought that Bacon's imprisonment was due to his vigorous avowal of astrology. This, however, seems improbable since Bacon always steered clear of heterodoxy by insisting that astrological influences in no way impaired free will or implied any sort of fatalistic determinism. Bacon's position on astrology is almost identical with that of St. Albert, who never had any difficulties on this count.[26]

Bacon's most recent biographer has suggested that he was imprisoned because he fell victim to the Joachimite heresy. In support of this he gathers a number of quotations showing that Bacon was much taken with the numerous prophecies on the end of the world and the coming of the anti-Christ then circulated by various enthusiastic and heterodox groups.[27] This is a possibility, but this fascination was very common at the time even among those on whom not the slightest ecclesiastical suspicion was ever cast. In the absence of any more positive evidence we must confess that at this time we simply do not know why Bacon was imprisoned.

It would seem that by 1292 Bacon was released from confinement because at this time he was allowed to publish his *Compendium studii theologiae.* Only fragments survive, but what does remain consists mostly in the same intemperate outpourings against the theologians and their manner of teaching.[28] By now Bacon was an old man. His life had covered almost the whole of the thirteenth century. He must have died soon after 1292, but the date of his death is unknown.

DOCTRINE

We must now turn to an analysis of Bacon's doctrine. It is, as we have pointed out, basically only philosophical. We cannot, of course, attempt a complete doctrinal exposition. In lieu of this we shall concentrate on certain crucial points in the various areas of philosophy.

From this investigation one point, which would appear to be decisive in any judgment on the value of his work, seems to emerge. It is simply this: although Bacon appears to be an out and out Aristotelian, his grasp of the Philosopher's thought is very unsure. His notion of Aristotelian science is vitiated by an eclecticism that is predominantly cast in the old Platonic mold which had characterized Western speculation almost from the beginning. This is hardly surprising. It is now fairly clear that previous to the work of the supreme geniuses of Aristotelian interpretation, St. Albert and St. Thomas, virtually everyone was at heart some sort of a Platonist; even though from the middle of the twelfth century on this meant reading Platonism into the text of Aristotle himself.[29]

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[26] Lynn Thorndike, *History of Magic and Experimental Science* (New York: Macmillan, 1923), II, pp. 659-677.

[27] Easton, *op. cit.,* pp. 199, 134-137.

[28] *Ibid.,* pp. 186-191.

Bacon certainly wanted to be an Aristotelian. It is true that he himself, on his return to Oxford, began to realize how extremely difficult it was to understand Aristotle. It is also probably true that Aristotle's singular lack of mathematical emphasis must have been dissatisfying to a man of Bacon's views. Nevertheless it would be a complete misunderstanding of Bacon's intentions if we were to think for a moment that for him Aristotle was not the supreme philosopher and that he, Bacon, was not meant to be Aristotle's foremost interpreter in the great work of Aristotelian assimilation going on in the West during the thirteenth century.

In the manner of all his predecessors, however, Bacon had to rely heavily on the work of previous interpretors of the Aristotelian corpus. For Bacon these interpretors, as he himself points out, were primarily the Arabs, especially Avicenna.[30] Bacon's assistants in the interpretation of Aristotle included as well, however, Avecebron the Jew, William of Auvergne the Parisian master, and Robert Grosseteste, Robert Kilwardy, and Adam Marsh, whom we have already mentioned. All of these in company with the still dominant Augustine combined in many cases to lead Bacon to positions that are far removed from a sound Aristotelianism.

We can begin our analysis by a consideration of Bacon's position on the closely related problems of scientific methodology and the relation of the sciences. It is in this area that Bacon has attracted most modern attention. The reason is easy to see. There is little question that what is most characteristic of modern science (apart from its technological character, and this is in Bacon too) is its heavy if not, according to some, exclusive reliance on mathematical analysis and measurement plus its insistence on the absolute primacy of experience in any scientific investigation. Bacon's methodology is characterized by very much the same approach. On the necessity for experiment he writes, for instance:

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[29] James A. Weisheipl, *The Development of Physical Theory in the Middle Ages* (New York: Sheed and Ward, 1959), pp. 12-62; Gilson, *op. cit.*, pp. 361-363, 383, *passim*. Logically the failure to grasp Aristotelian principles is decisive in a judgment on the philosophical value of a man's thought only if Aristotle's philosophy is that which is most in conformity with reality. Let us hope that we not be thought Latin Averroists if we state that, in our opinion, such is the case.

[30] Gilson, *op. cit.*, p. 295; Easton, *op. cit.*, 67-86.

> There are two modes in which we acquire knowledge, argument and experiment. Argument shuts up the question and makes us shut it up too; but it gives no proof, nor does it remove doubt, and cause the mind to rest in the conscious possession of truth, unless the truth is discovered by way of experience.[31]

On the supreme utility of mathematics Bacon has this to say:

> For men are always ready to cast aspersions on that which they do not know, and those things which are not common or customary, or not shown by examples. And this most of all happens among men in regard to mathematics. Indeed the Devil brings this about, because nothing useful in wisdom, theology, or philosophy nor in the knowledge of this world can be attained by the way of wisdom without the benefit of mathematics . . .[32]

We may pass over whether Bacon's notions on these matters agree in every detail with those of modern scientists. What obvious agreement there is, even allowing for any possible niceties of distinction one might care to make, is very impressive.[33]

Bacon's doctrines on these points must be more fully presented, however. We can begin with his doctrine on experience. There are three ways of knowing—authority, reasoning, and experience, despite the previous quotation in which Bacon distinguishes only two ways of knowing. Of all these ways experience is the most basic since we cannot believe with prudence unless we base our belief on an experienced truthworthiness of the authority; nor can we reason unless we derive our principles from, and test our conclusions by experience.[34] Experience itself is of two types, external sensible experience and internal experience. It is by internal experience that man receives divine illumination and revelation. All experience ultimately depends for its validity on internal experience since it is only by divine illumination that man attains certitude in experience at all. As a matter of fact everything that was ever attained by the Greeks in philosophy was not so much derived from external experience as from the knowledge of divine revelation as recorded by Moses and the other Jewish doctors. Even today all knowledge whatsoever is in the Bible, even though to understand it one must interpret the Bible with philosophy and canon law.[35]

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[31] Roger Bacon, *Opus Majus*, ii. 167, tr. R. Adamson as quoted in A. G. Little, "Introduction: On Roger Bacon's Life and Works," *Roger Bacon Commemoration Essays, ed. cit.*, p. 18.

[32] Homines enim semper sunt parati reprobare quod nesciunt, et quae non sunt vulgata, nec consueta, nec exemplis declarata. Et maxime accidit hic casus apud homines respectu mathematicae. Et hoc procuravit Diabolus, quia nulla utilitas sapientiae, theologiae, et philosophiae, nec istius mundi, per vias sapientales procurari potest sine beneficio mathematicae, . . . Roger Bacon, *Opus Tertium, ed. cit.*, c. lxv, pp. 268-269, 11. 31-32 et 1-6.

[33] Easton, (*op. cit.*, p. 8) sees a radical difference between Bacon's notion of experience (and the general Aristotelian notion of experience also), and the modern notion of experiment. I think this is misleading. Basically the "controlled" experiments of the modern scientist and the intelligent experience of a speculative observer are both directed to the same end of penetrating to what is essential in a given thing and eliminating from consideration what is accidental.

[34] Fraile, *op. cit.*, p. 802.

Bacon's doctrine on experience has a good deal to offer. Nevertheless, its limitations are apparent. Bacon begins boldly enough with his insistence on the primacy of experience, but by his retention of divine illumination as the condition of natural certitude and by his adhesion to the very old but very arbitrary Judaeo-Christian folk tale according to which the Greeks were merely the pupils of Moses, Bacon fails to establish, in an unequivocal manner, the genuine autonomy which natural experimental knowledge enjoys. For him natural knowledge based on natural experience and natural intellectual understanding was still *per se* subalternated to the divinely certified and perhaps even divinely revealed principles of theology.

Bacon's position on this matter stands in interesting contrast to that of his contemporary, St. Albert, who had been able to appreciate very clearly the autonomy of the various philosophical sciences. It is a pity that Bacon could not see his way clear to cooperate with St. Albert along the fruitful lines which the learned German master had set down, rather than to engage in the violent opposition to the Albertian insight which so severely distorts Bacon's philosophical outlook.

Besides his stand on divine illumination there are other points in Bacon's doctrine of experience which should cause one to be suspicious. Among these is his insistence that the conclusions of a demonstration are never certain without experience of them. He writes:

> If any man who had never seen fire were to prove by satisfactory argument that fire burns and destroys things, the hearer's mind would not rest satisfied, nor would he avoid fire; until by putting his hand or some combustible thing into it, he proved by actual experiment what the argument laid down; but after the experiment has been made, his mind receives certainty and rests in the possession of the truth . . .[36]

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[35] Gilson *op. cit.*, pp. 675-676.

[36] Roger Bacon, *Opus Majus, loc. cit*, p. 18.

The dangers of such a position are evident if we consider the case of conclusions which are not susceptible to experimental confirmation—the existence of God, for instance. We might interpret Bacon benevolently on this point and understand him to mean only that the conclusions of demonstrations in natural science are not known without experimental verification. This would be a reasonable position since it is true that the principles in natural science are seldom clearly enough comprehended to allow us to deduce any properties without sensible confirmation and indeed initial sensible suggestion. Bacon is inclined to be extravagant, however. He does not limit himself to applying this dictum only to natural science. In the very quotation we have just listed in fact he goes on to say that, "This is the case even in mathematics, where there is the strongest demonstration."[37] Now this is patently false. We are quite certain once we know, by experience indeed, what a triangle is, that its angles are equal to 180°, even without experimental confirmation of this conclusion.

There are more curious points to be observed about Bacon's notion of experience. For him there is a whole science of experience. In fact there are three dignities of experimental science of which experience as a method of verification is only the first. In addition, experimental science performs the function of taking the principles of one science and applying them in another. For instance, knowledge gained from the science of zoology of how certain animals prolong their lives can be applied to the art of medicine in order to help men prolong their lives. The third and highest dignity of experimental science is that whereby it applies speculative knowledge to make the marvelous machines and other technological works which we have already mentioned.[38]

This whole notion of an experimental science is interesting, but it is really quite superfluous. In the first place, it is difficult to see just what is the criterion of division for the three dignities of the science. In the second place, the subjects set forth in the various dignities hardly constitute matter for separate sciences at all. Experience as a verification of facts is really a part of logic and of the separate methodologies attached to each of the sciences.[39] Moreover, it is evident that insofar as an art or a science has need to be subalternate to another art or science, this task must be performed by the subalternating art or science itself. Such a task is entirely beyond the competence of any separate experimental science even of the second or third dignity.[40]

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[37] *Ibid.*

[38] Little, "Introduction: On Roger Bacon's Life and Works," *loc. cit.*, pp. 18-19.

[39] James A. Weisheipl, O.P., *Aristotelian Methodology, A Commentary on the Posterior Analytics of Aristotle* (River Forest, Illinois: unpublished), pp. 1-2.

The thought suggests itself that Bacon's whole notion of the relation of the sciences is rather casual. This suspicion is confirmed when we consider his idea of the utility of mathematics and its relation to the other sciences.

For Bacon scientific methodology is basically experimental, but it is also, in another sense, basically mathematical. Nothing, as we have seen, can be known without mathematics. To understand what lies behind such a claim it is necessary to understand how Bacon conceives the relation of mathematics to the other sciences. He divides the speculative sciences, in the standard manner, into natural science, mathematics, and metaphysics. Now this division lends itself either to a Platonic or an Aristotelian interpretation. The difference in interpretation reduces to the fact that for a Platonist the three sciences are hierarchically subalternated in such a way that the proper principles of natural science are to be found in mathematics. Likewise the proper principles of mathematics, numbers, are subalternated to the principles of a Platonic metaphysics of the One.[41] Now if we are to make any sense out of Bacon's claims on the utility of mathematics, it must be done somehow in terms of this Platonic notion of the *per se* subalternation of all things.[42] Insofar as natural things are only, so to speak, substantially qualities, Bacon's insistence on the utility of mathematics is reasonable. It is difficult, however, to understand any scheme whereby the intermediate science of mathematics is necessary to understand metaphysics.[43]

As a matter of fact, however, the speculative sciences are not subalternated to each other. Natural science is quite autonomous from mathematics. In addition to quantities there are sights and sounds and smells and types of motion which together sufficiently reveal substantial natures that mathematics can never attain by itself. It is true, as Aristotle has pointed out, that insofar as they are susceptible to measurement natural things can be studied through principles subalternated to mathematics. The point is, however, that mathematical analysis of natural things is only an accessory; that natures will never be revealed from mathematical principles in themselves since quantity is not a substantial but an accidental mode of being which follows upon substantial nature and does not constitute it.[44]

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[40] Josephus Gredt, *Elementa Philosophiae Aristotelico-Thomisticae* ed. 8a (Frib. i. Br,: Herder, 1956), nn. 228-229.

[41] James A. Weisheipl, O.P., "Albertus Magnus and the Oxford Platonists," *loc. cit.*, pp. 130-131.

[42] For a collection of Baconian texts on the relation of mathematics and the other sciences *vide* D. E. Smith, "The Place of Roger Bacon in the History of Mathematics," *Roger Bacon Commemoration Essays, ed. cit.*, pp. 178-179.

[43] James A. Weisheipl, O.P., *The Development of Physical Theory in the Middle Ages, ed. cit.*, p. 56.

Now as it turns out Bacon did not speculate according to the mathematical straight jacket which his methodology seems to propose. His metaphysics is based on the Aristotelian notion of the primacy of being and not of the One.[45] Moreover, his natural science does not proceed merely in terms of mathematical analysis. Whenever subalternation of natural investigation is called for in Bacon's work, as in his tractates on optics, he proceeds according to Aristotelian principles of limited subalternation.[46]

Apparently what has happened in Bacon's much discussed doctrine on the utility of mathematics is that he has retained an old Platonic vestige in his theory which he was sensible enough in his practice to disregard more or less completely, insofar, that is, as basic theory can be disregarded in practice.

Bacon was hampered in his understanding of Aristotle by a latent Platonism in still another area, namely the crucial area of the notion of the true first principles of natural beings, matter and form. A Platonist always tends to identify simply the real and logical world. If something is conceived as a separate form, it really is separate. Now since in the consideration of the mind every natural being has all sorts of forms, the Platonist, by his exaggerated realism, is driven to duplicate these distinctions in the real world. In the face of any natural unit he inevitably is lead to postulate many really distinct substantial forms.[47]

Bacon is very much in this tradition. For him every grade on the Porphyrian tree has a proper form and a proper matter, both of which are really distinct from the proper form and proper matter of every other grade. Not only this. At each metaphysical grade there is not just one proper matter and form, but two. There is a proper specific or universal matter and form, and there is a proper individual matter and form.[48]

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[44] James A. Weisheipl, O.P., *Aristotelian Methodology, ed. cit.*, pp. 24-26.

[45] Gilson, *op. cit.*, pp. 305-307.

[46] A. C. Crombie, *Grosseteste and Experimental Science* (Oxford: Clarendon Press, 1953), pp. 143-162.

[47] The immediate source for the middle ages of the doctrine of the plurality of substantial forms was Avecebron, not Plato himself. *Vide* Gilson, *op. cit.*, p. 648.

[48] D. E. Sharp, *Franciscan Philosophy at Oxford in the Thirteenth Century* (Oxford: University Press, 1930), pp. 132-142.

There is blatant Platonism here. We can skip over what might be said from an Aristotelian point of view on the doctrine of the plurality of substantial forms, but the notion which Bacon proposes of the existence of two distinct forms on the same level, the one universal and the other individual, is worth further consideration. By holding for such an arrangement Bacon shows in a stroke that in a matter which is altogether basic in philosophy, the problem of universals and their relation to material things, he fails to hit the mark. The basic fact from which the whole problem of universals takes rise and on which the correct solution of the problem necessarily depends is this: that the metaphysical universal which we know is *identified* in some way with the individual numerical difference of a thing. Plato had discoursed at length on the universal. As Aristotle pointed out, however, he failed in what is most basic to the problem, since he failed to see and provide in his theory for the connection between the singular thing and the universal.[49] Plato broke the identity of the universal with the singular individual thing and put the universals in heaven. Bacon leaves his universals within real things, but they are as unconnected and unrelated to the singular reality as Plato's universals in heaven.

Besides his doctrine on the plurality of substantial forms Bacon embraces a second doctrine which was typical of Franciscan speculation in general. This is the notion of universal hylomorphism. For Aristotle the fact which necessitated the positing of matter was change. If, therefore, something did not change, as such it had no need for matter. For Bacon, however, following Avecebron in this as he had followed him on the question of the plurality of substantial forms, creaturliness was the fact which necessitated matter. Since all things, even spiritual things, were created, all things had matter. Thus it is that in Bacon one comes upon the notion of a spiritual matter corresponding to a spiritual form. Below this matter and really distinct from it is corporeal matter corresponding to a corporeal form, and so on down the Porphyrian tree.[50]

Let us look at one more crucial area of philosophical investigation in illustration of Bacon's failure to grasp Aristotelian principles clearly. Aristotle in seeing that our intellectual knowledge was of objects stripped both of accidents and, more surprisingly, of individuating characteristics; and seeing, moreover, that our intellectual knowledge was of things in this world, posited not only an *intellectus possibilis* which actually knows universals, but also an *agens intellectus,* which in some remarkable way abstracts the universal from sensible individual phantasms.[51]

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[49] Aristotle, *The Basic Works of Aristotle,* Oxford translation, ed. Richard McKeon (New York: Random House, 1941), Metaphysics, bk. VII, cc. 13-15; bk. XIII, c. 4.

[50] Gilson, *op. cit*, pp. 296-297.

It is unclear whether Aristotle himself held that the *intellectus agens* was numerically one and used by all men or whether each man had his own. At any rate for the very influential commentator, Alexander of Aphrodisius, the *agens intellectus* was numerically one, separate, and distinct from every individual man. Alexander was followed in this by the Arab philosophers and especially by Bacon's favorite, Avicenna.[52] This is one line of thought on the so called separated intellect which can be disentangled from Bacon's thought.

There is a second line of thought on this separated intellectual agent, however, to which Bacon is likewise heir. This line begins with St. Augustine. The holy bishop held that for the intrinsic act of knowing itself man must receive an illumination from without whereby he can obtain certitude and possession of eternal truth. This separated Illuminator, quite a different thing from the Aristotelian abstractor, is God Himself.[53]

Coming upon these two lines of thought Bacon combines them in the following way. He identifies the Augustinian Illuminator with the Alexandrian *agens intellectus.* However, he also posits a second kind of *agens intellectus* which is numerically multiplied and proper to each man. Each man too, of course, has his own *intellectus possibilis.* Nominally all these intellects are Aristotelian. If, however, we consider the proper functions of these cognitive instruments, their real Augustinian character quickly becomes evident.

In the first place Alexander's separated *agens intellectus* is not an abstractor but an illuminator. The character of the *agens intellectus* and the *intellectus possibilis* in man is similarly distorted in Bacon's conception. Taking another Augustinian distinction, that of the *ratio inferior* and *ratio superior,* Bacon identifies the function of the *intellectus possibilis* with the former and the function of the *agens intellectus* with the latter, so that all intellectual knowledge which is derived from sensible inferior things is known by the *intellectus possibilis* while all knowledge which is of non-corporeal superior things is known by man's *agens intellectus*.[54] But what do the human intellects of Bacon really do? Actually all they do is turn to gaze upon their objects as a set of eyes. Knowledge and certitude come only after divine illumination.

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[51] St. Thomas, *In De anima,* lib. III, lec. 10 (ed. Parmae, *Omnia Opera,* vol. 20, 1866).

[52] Gilson, *op. cit.,* pp. 295, 183-187.

[53] *Ibid.,* pp. 76-77.

There is more to be said about Bacon's notion of intellectual knowledge. We have said that the *agens intellectus* in man looks upon higher spiritual objects not derived from sensible experience. It must derive its object from some experience, however. What is this experiential source? Bacon's answer is that there are innate ideas of these higher spiritual things in each man. To a mixture already thick with the psychological notions of Aristotle, Alexander of Aphrodisius, Avicenna, and Augustine, we can now add a contribution from Plato himself.[55] To complete the picture let us just add that the manner in which the *intellectus possibilis* knows its sense objects is not so much that it knows by means of sense phantasms from which universals are abstracted, but rather that it knows because the sense phantasms are illuminated by the innate ideas.[56] Just how these innate ideas make the sense data any more intelligible is, to say the least, unclear.

One thing, however, is clear: in the whole complicated paraphanalia of intellectual cognition which Bacon sets up, there is no real *agens intellectus* in the Aristotelian sense to be found. The reason for this is obvious. Bacon never saw any need for the special abstractive power provided by the *agens intellectus*. For him the universals had no need to be withdrawn from the individuating determinations of the real things since they already existed really distinct from the individual forms in the first place. All the abstraction needed in Bacon's world could almost be performed by a machine.

CONCLUSION

What must we, therefore, answer to the question originally posed? Is Bacon a doctor or not? We are using the term, of course, in the broad sense. There is no question that Bacon's apparent lack of any mastery of theology precludes our even asking whether he can be considered a doctor in any strict canonical sense.[57] For that matter even if Bacon did possess sufficient theological wisdom, nobody has ever seriously suggested that he possessed that degree of heroic Christian virtue sufficient to make the saint he would have to be were he to be strictly established as a doctor of the Church. We may still ask, however, whether Bacon was a doctor in a less strict sense; i.e., was he an outstandingly upright and learned man?

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[54] *Ibid.*, pp. 304-305, 674. It is not likely that Bacon really understood the notions of the *ratio inferior* and the *ratio superior* in the same manner as Augustine. At any rate he uses the great bishop's words.

[55] *Ibid.*, pp. 303-305, 674.

[56] *Ibid.*, pp. 304-305.

No final judgment can be given on this point in the absence of any fuller knowledge of the circumstances of his imprisonment. Tentatively, however, from what we know now, we can say a few things.

We may first consider Bacon's moral stature. It is, of course, impossible to judge with certitude in such matters. It would seem, however, that one might say that in this order Bacon was not outstandingly successful. In particular his relations with his fellows, certainly an important element in the moral life of any scholar, seem to have been consistently ungracious. It is true that Bacon often expressed an admiration for Grosseteste and a number of his disciples, but his criticisms of St. Albert, Alexander of Hales, Richard of Cornwall, Michael Scot, and William of Moerbeke, to mention only some of those on whom he loosed his critical barbs, are extreme and unwarranted. At times, moreover, his critical remarks seem to be dictated more by personal rancor than by purely speculative concern.[58] Bacon's unhappy relations with his Franciscan superiors, men whom we have reason to believe were for the most part fair minded and fervent religious, lead one to the same unedifying conclusion.[59]

If, however, we prescind from a consideration of Bacon's moral character to concentrate on what is most formal in the makeup of a doctor, namely intellectual worth; what may we say of Bacon and his efforts? It would be extremely rash to assert that Bacon was heretical. Although he was unabashedly critical of many things in the Church which struck him as abuses, he was always quite orthodox in all that he said.[60] In fact it would appear that, contrary to being an enemy of the Church, Bacon was inspired in much of his work by a very genuine love for its well being.

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[57] If, as we have argued, Bacon was not a master in theology, it is very unusual that he should be called a doctor at all by the medievals since this honorific was usually reserved for masters in theology or in canon law. For some not very extensive discussion on the early lists in which Bacon figures as the *doctor mirabilis, vide* Franz Ehrle, *Die Ehrentitel der scholasteschen Lehrer des Mittelalters* (München: Verlag der Bayerischen Akademie der Wissenschaften, 1919), pp. 44-48; 53-55.

[58] T. Witzel, *art. cit.*, pp. 111-112, 115-116.

[59] On Richard of Cornwall, one of Bacon's chief enemies, successor to St. Bonaventure in the Franciscan chair at Paris, sharp tongued, but non-commital on the questions of the plurality of substantial forms and universal hylomorphism. *vide* Gilson, *op. cit.*, pp. 703. 355.

We have already alluded to our lack of knowledge of the errors for which Bacon was condemned by Jerome of Ascoli. Presumably these errors would concern some point related to theology. In our present state of knowledge, however, the only *doctrinae suspectae* of which we are aware in Bacon do not lie in the area of theology at all, but rather in the field of philosophy. Ironically, moreover, contrary to the findings of his ecclesiastical judges, the doctrines that we know of in Bacon which appear suspect are not *novitates* in any sense but rather the hoary old Platonic misunderstandings which had been entrenched in Western speculation for so long that to some they would seem to be almost a part of the *depositum fidei* itself.[61]

Given Bacon's basic Platonism and the consequent confusion in his Aristotelian interpretation, it would appear that his claim to doctoral honor even on the intellectual level is seriously compromised. Certainly it would be extravagant to rank him among the greatest of the doctors.

It does not follow, however, that Bacon is to be absolutely excluded from the company of the doctors. There is nothing, after all, to prevent our recognizing degrees of eminence even among doctors. With this precaution in mind I am convinced that, on the intellectual level, a valid case can be made for recognizing Bacon as the doctor his admirers have always claimed him to be.

In the first place Bacon did succeed in his own way in assimilating a great deal of Aristotelian thought, a fact which is obvious on any reading of a complete summary of his work.[62] Seen, therefore, in the context of his times, as part of the great intellectual effort carried on in the West to assimilate the new Aristotelian learning, Bacon's accomplishments are quite respectable. Moreover, even judged by absolute standards of intellectual solidity it would seem that Bacon's work is extensive enough and good enough, especially in optics, in chronology, in the theory of the propagation of forces, in mechanical technology, and in Biblical philology, to justify the honorific epithets with which he has been vested.

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[60] Easton, *op. cit.*, pp. 118-143.
[61] Gilson, *op. cit.*, 410-420.
[62] *Ibid.*, pp. 295-307.

But we must stop here. Granted that Bacon is a doctor and genuinely so, we would be running contrary to the whole burden of this paper if we did not immediately add that he is not a doctor without limitations. The limitations which hamper him, moreover, are not superficial nor are they of a type which do not in the end show themselves to be quite inimical to the demands of an adequate philosophical science.

Alfred Wilder, O.P.

ST. THOMAS CONTRA AVERROISTAS

I

By the year 1200 the study of Aristotle's thought was no longer limited to his logical works. A large number of his non-logical writings became available to Western scholars through translations made in Toledo, Northern Italy, and Sicily.

Aristotle, however, did not enter the West alone. Before the thirteenth century, Latin scholars knew the paraphrases of Avicenna and many of the treatises of Al-kindi, Al-Farabi and Ibn Gebirol, to say nothing about the spurious *Theologia Aristotelis* and the *Liber de causis*. In the first half of the thirteenth century the important commentaries of Averroes (Ibn Roshd) entered the Latin West. These commentaries, paraphrases and treatises were very helpful in understanding Aristole, who was difficult enough to understand in any language. There was one obvious danger in relying on the interpretation of the Aristotelian text given by Persians, Arabians and Jews. Their interpretation at times turned out to be far from the meaning intended by the Stagirite himself. This was due partly to the neo-Platonic tinge of the translations received by the Arabs from the Syrian Nestorians; and it was partly due to the obscurity of Aristotle's own expressions. The result was that the West, by relying on the commentaries to understand the text, received an Aristotle garbed in a cloak of many colors. The one who tried hardest to reach the meaning of the pure Aristotle was, surprisingly enough, Averroes.

The Cordoban, Averroes, saw clearly the Platonism of his predecessors, and he sincerely tried to perceive the true thought of Aristotle. However, within a few decades after Averroes was received by the Latin West, it became questionable whether he had in fact understood the Stagirite.

Perhaps the most famous of these questionable interpretations that gained ascendency during the third quarter of the thirteenth century was that concerning the unicity of the human intellect.

In his commentary on the Third Book of Aristotle's *De anima,* Averroes reaches the conclusion that man does not possess his own personal agent and possible intellect. Rather there is only one agent and one possible intellect for all mankind, and these exist outside of man as separated substances. The only faculties of knowledge that man can really call his own are his sense faculties. According to Averroes, the highest faculty of man's sensitive soul is his cogitative faculty.[1] Together with the imagination, the operation of the cogitative power "is the vital spadework that clears the way for the action of a higher power;"[2] it prepares a sensible species which the separated agent intellect renders intelligible so as to be capable of being known in the possible intellect. The cogitative power is the junction between the body and separated intellects because by means of the phantasm produced in the cogitative power, the possible intellect unites itself to man.[3] In this way man is said to exercise the act of understanding. At times, Averroes calls the imagination and the cogitative power the "passive intellect" on account of their corruptible and material nature.

Therefore, the sum total of man's cognitive processes consists in producing sensible species which the separated intellects use in their operation. Man's chief role is to furnish the proper object for the separated possible intellect.

What was the fundamental reason that motivated Averroes to interpret Aristotle in this way? Averroes believed that the possible intellect cannot be united to the body without the intellect sharing in the nature of the body. If the possible intellect were a faculty of a material body, it would become immersed in matter and become in fact a part of the body. But this is impossible. According to Aristotle the possible intellect is immaterial and "pure of all admixture."[4] To preserve its immateriality the intellect must be separated from the body. Averroes went to great lengths to preserve the immateriality of the possible intellect. His writings manifest an intense realization that the possible intellect must be free from matter in order to perform its function of knowing.

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[1] "Et intendebat hic per *intellectum passiblem* formas ymaginationis secundum quod in eas agit virtus cognitativa propria homini. Ista enim virtus est aliqua ratio, et actio eius nihil est aliud quam ponere intentionem forme ymaginationem cum suo individuo apud rememorationem, aut distinguere eam ab eo apud formationem et ymaginationem. Et manifestum est quod intellectus qui dicitur materialis recipit intentiones ymaginatas post hanc distinctionem. Iste igitur intellectus passibilis necessarius est in formatione." F. S. Crawford, (ed.), *Averroes Cordvbensis Commentarivm Magnum in Aristotelis De Anima Libros,* (Vol. VI, 1, in *Corpus Commentariorum Averrois in Aristotelem,* ed. H. A. Wolfson, D. Baneth and F. H. Fobes, Cambridge: Mediaeval Academy of America, 1949), Comm. 20, p. 449.

[2] B. Zedler, "Averroes on the Possible Intellect," *Proceedings of the American Catholic Philosophical Association,* XXV, (March 1951), p. 170.

[3] Averroes, *De anima,* III, Comm. 5, (CCAA, VI, 1), pp. 404-405.

The logical conclusion of this doctrine is obvious. To say that each man possesses only a corporeal, corruptible knowing faculty, is to deny the personal immortality of the human soul. Man has no power of himself to perform an act of intellectual knowledge, but must depend upon a separated Intelligence. For it is not man, but the possible intellect that exercises cognition. In short, man's soul is devoid of a spiritual faculty and thereby doomed to corruption with the rest of the material world. Furthermore, if man does not have his own intellectual soul, neither does he have free will and thus he is excused from moral responsibility in all his actions.

II

Strangely enough, this un-Christian doctrine of Averroes attracted a following in Latin Christendom. In Siger of Brabant Averroism found an energetic advocate. Siger and his followers in the Arts faculty at the University of Paris began a movement known as Latin Averroism. The Latin Averroists were convinced that Averroes had given a faithful, accurate, and true compendium of Aristotle's own thought. Yet their doctrine was more Averroist than Aristotelian. Having taken Averroes as their guide for an understanding of Aristotle, they fell into the same pitfalls as he had, all the while thinking themselves in possession of a pure and orthodox Aristotelianism.

Following the interpretation of Averroes, Siger held that the intellective soul and its faculty, the possible intellect, existed separate from man. This intellective soul was considered to be numerically one for all men. Siger encountered the same problem that troubled Averroes. Averroes asked how an immaterial power such as the possible intellect can be the faculty of a material body. Siger asked how can the intellective soul which is spiritual and immaterial be the substantial form and perfection of a material and corruptible body. According to the principle *operatio sequitur esse*, "non contingit substantiam aliquam esse unitam materiae et potentiam illius substantiae esse separatam a materia."[5] But the intellect is free of matter. As far as Siger was concerned, he saw no alternative but to remove the intellective soul from man and make it a separated substance in order to preserve its spiritual and immaterial qualities. But immedaitely Siger encountered a dilemma. How could he account for the fact that man exercises intellectual cognition and at the same time maintain a separated intellective soul? He solved the problem by distinguishing between the *esse* of intellective soul and its *operatio*. The intellective soul is united with the body in its operation insofar as it uses the bodily phantasms for the act of understanding. It depends upon the body as a power depends upon its proper object. However, the intellective soul does not depend upon the body for its existence, but is able to exist independent of the body.[6] In this way man is said to exercise the act of understanding. But as to the problem of man's personal immortality, Siger truly believed that he could not prove it with reason. And so as Averroes did a century before, Siger now sacrificed certitude concerning man's immortality for an explanation of knowledge.

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[4] Aristotle, *De anima,* III, 429a20, *The Basic Works of Aristotle,* ed. By R. McKeon, (New York, 1941) p. 590. Averroes believed this to be the true interpretation of the Philosopher; Commenting on 429a10-430a9, Averroes says, "Ista enim intentio, scilicet quod iste intellectus est talis, bene apparet intuentibus demonstrationem Aristotelis et sua verba; de demonstratione autem secundum quod exposuimus; de verbis vero quia dixit ipsum esse non passivum, et dixit ipsum esse separabile et simplex." Averroes, *De anima,* III, Comm. 5, (CCAA, VI, 1), p. 389.

As a Christian, Siger realized that his teachings were not in harmony with the faith. But he also felt that he could not ignore the arguments he had constructed from reason. Siger believed that in situations when the conclusions of philosophy and theology were at odds, we are compelled to argue as if there were a "double truth." There is such a dichotomy between the realms of philosophy and theology that the conclusions of each can be held without fear of contradiction. However, Siger wanted it understood that he was arguing as a philosopher and not as a theologian. Even though Divine Revelation tells us that man's soul is immortal, nevertheless, Siger's intention is to discover the doctrine of the philosophers and to treat the problem in a philosophical manner rather than the truths of Faith.[7]

The first condemnation of the Averroistic errors took place on December 10, 1270, when the Bishop of Paris, Stephen Tempier, condemned thirteen philosophical propositions. However, when the Averroists continued to teach their errors, Bishop Tempier officially condemned the movement on March 7, 1277, this time being a little more exact and condeming 219 propositions.

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[5] Siger of Brabant, "Questiones de anima intellectiva," ed., by P. Mandonnet, *Siger de Brabant et l'Averroïsme latin au XIIIe*, 2nd ed., Les Philosophes Belges, VIII (Louvain 1911) vol. 2, p. 152.

[6] *Ibid.*, pp. 152; 154-155.

[7] *Ibid.*, p. 164.

III

In 1268, during the height of the controversies and disorders at Paris, St. Thomas was in residence at Viterbo, Italy, teaching and writing his monumental *Summa theologiae*. The Master General of the Dominicans, seeing the gravity of the situation at Paris, and believing Thomas to be the one best suited to meet these difficulties, ordered him to Paris. Thomas arrived at Paris probably in January of 1270.

The years that followed were the busiest of Thomas' brilliant and illustrious career. Not only did he have to refute the errors of Siger, but at the same time he had to defend himself against two other foes. A group of theologians, under the leadership of the Franciscan, John Peckham, was openly opposed to Aristotelianism. They saw the thoughts of the pagan Aristotle to be diametrically opposed to the great St. Augustine. They sharply attacked St. Thomas for adopting Aristotle. Aristotle was opposed to the Faith, and St. Thomas, by using him, was coming dangerously close to heresy. Furthermore, the secular masters at the University were very eager to be rid of St. Thomas and his fellow mendicants. They looked upon the rise of the religious orders at Paris as a threat to their own position and prestige in the University.

St. Thomas wasted no time in counterattacking his enemies. In his opusculum *Contra pestiferam doctrinam retrahentium homines a religionis ingressu,* he answered the objections of the seculars. In 1270, he publicly defended the Aristotelian position in a debate with John Peckham. But in the most crucial battle of all, the battle of pure Aristotelianism against the corrupted Aristotelianism of the Latin Averroists, St. Thomas sounded the death note of Siger's movement with his polemical masterpiece, the *De unitate intellectus contra Averroistas.*

We know that St. Thomas wrote the *De unitate* sometime after his work had commenced at Paris in 1270. Most scholars believe that it was composed before the Condemnation of 1270.

In the opening lines of his work, St. Thomas states that he will not attempt to prove in a polemical way that the errors of the Averroists are contrary to the Faith because this is already evident. Rather he will show that such doctrine is contrary to the principles of philosophy and will call upon reason alone to disprove it. St. Thomas intends to meet them on their own battlefield.

Upon a study of the *De unitate*, we find that it is divided into two major arguments; the first argument is that the possible intellect is not a substance separated from the human body but a faculty belonging to the rational soul; the second argument is that the possible intellect is not one for all men.

IV

Let us now turn our attention to a brief analysis of the main arguments used by St. Thomas in his refutation of the Latin Averroists. First, St. Thomas employs Aristotle to show that the possible intellect is not a substance separated from the body.

Since Averroes claimed that Aristotle considered the possible intellect to be separated and not a faculty of man's soul, St. Thomas proves from the Philosopher's own words that this is an erroneous interpretation. Averroes' mistake arose from an apparent inability to understand Aristotle's words correctly. A careful examination of the *De anima* reveals that Aristotle held the intellect to be a faculty belonging to man. Let us look at the Angelic Doctor's evidence.

In the second book of the *De anima* Aristotle defines the soul as "the first act of a physical organic body."[8] This definition simply states that the soul is the substantial form of a physical organic body. Contrary to the opinion of Averroes, this definition applies universally tc each soul, namely, vegitative, sensitive, and intellective; for Aristotle clearly states that in the first place it is necessary to predicate something that is common to all souls.[9] Nor does the Philosopher intend to exclude the intellect from this definition. In subsequent passages,[10] he distinguishes those parts which depend upon matter for their operation, namely vegetative, and sensitive; and he distinguishes those parts of the soul which are separated and free from matter, i.e., the intellect and will. Therefore it would seem from Aristotle's own words that the intellect is a faculty or part of the soul which is the form of the body.

Aristotle further defines the soul when he says that "it is the soul by or with which we primarily live, perceive, and think."[11] From this it follows that the rational soul is the first act of a living body, since it is that by which the bodies first carry on their life functions. Moreover, something is said to live, if it manifests one of the four kinds of life, namely, nutrition, sensation, locomotion, and understanding. Therefore, the rational soul is the source or principle because these functions manifest themselves as the effects or operations of the rational soul.[12] If the soul is separated from the body, the body is no longer in act as a living thing.

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[8] Aristotle, *De anima*, II, 12b5, McKeon, *ed. cit.*, p. 555.
[9] *Ibid.*, II, 412b4, McKeon, *ed. cit.*, *loc. cit.*
[10] *Ibid.*, II, 413a ff., McKeon, *ed cit.*, pp. 556-557.
[11] *Ibid.*, II, 414a12-14, McKeon, *ed. cit.*, pp. 558-559.

That the vegetative and sensitive powers are not a part of the soul seems to be quite certain for Aristotle. However, as far as the intellect belonging to the soul, Aristotle says that this must be discussed at greater length, since the soul seems to be of another genus.[13] He knows that the intellect belongs to the rational soul, but says this for the purpose of dialectical argument.

The intellect does seem to be of another genus because it appears to possess powers which are separated and free from corruptible matter. This, then, must be the possible intellect because, unlike the vegetative and sensitive faculties of the soul, it does not depend upon matter for its operation; therefore the rational soul is incorruptible and eternal.[14] Averroes used this passage in Aristotle as the crux for his argument that the possible intellect was a substance separated entirely from man. Averroes' difficulty was that he did not understand Aristotle's meaning of the word "separate." Aristotle's purpose in using the word "separate" was to show that the possible intellect was distinct from the vegetative and sensitive powers of the rational soul and yet not from the body. In other words, the possible intellect, unlike the senses, does not need a physical organ for its operation. To understand this clearly, let us compare the intellect with the sense powers to show that the possible intellect is not separated from man but from a physical organ.

The senses are in potency to their sensible objects. In this respect, the intellect is similar to sensation because it is also in potency to its intelligible objects. On the other hand, each sense is not capable of experiencing all sensations. Its potency is limited, as color in the case of the eye. But the intellect is in potency to all things, for it is able to know all things. Moreover, if the sensible object is too strong, the senses are impeded or even injured. This is not true in the case of the intellect because the intellect cannot be overpowered by the excellence of the specific objects. Therefore, since the intellect is able to know all things, and since it is not destroyed by the excellence of its object, the intellect must be free from matter and unmixed with a corporeal body.[15]

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[12] *Ibid.*, II, 413a20-30, McKeon, *ed. cit.*, p. 557.

[13] *Ibid.*, II, 413b25-26, McKeon, *ed. cit.*, p. 558.

[14] *Ibid.*, II, 413b26-27, McKeon, *ed. cit.*, p. 558.

[15] S. Thomae Aquinatis, *Tractatus de unitate intellectus contra Averroistas,* ed. critica L. W. Keeler, (Romae: Pontificia Universitas Gregoriana, 1946), I. par. 17-26.

St. Thomas argues further that if the intellect were intermingled with a bodily substance, it would possess some kind of corporeal nature. For example, if it were united to a bodily organ, it would become hot or cold in the same way as the sense of touch. This is impossible because the intellect receives its species in itself, whereas the senses receive theirs in an organ.[16]

Therefore, the word "separate" means free from and independent of a bodily organ in its operation, distinct from the other powers of the soul, and yet a part of the rational soul.

Certain philosophers attempted to attack this solution by saying that if the rational soul is the form of the body, the intellect must be at the same time a power of the body. Basing his argument on Aristotle's *Physics*, St. Thomas replies that the rational soul possesses a faculty which transcends matter and as a result does not depend upon matter for its existence or operation. Furthermore, this does not mean that the soul so excels its material body that it no longer is an act of a body. The soul does not give existence to a material body by means of its powers, but rather of itself (*per se*) insofar as it is the first act or substantial form of the body. Certain powers of the soul e.g., the vegitative and sensitive, require the body for their existence and operation, while others namely, intellect and will, do not need a corporeal organ. The possible intellect, then, is not a power of the body but a power of the soul.[17]

Another objection is put forward: if the possible intellect is incorruptible, as we have already stated, it is impossible that something incorruptible can be the form of corruptible body. Therefore, the possible intellect cannot be the soul nor a part of the soul. Secondly, since the soul essentially belongs to the body, if the body corrupts, the soul will likewise corrupt because nothing can exist without that which belongs to it essentially. Therefore, if we hold that the intellect is the form of the body, we are compelled to conclude that the intellect is corruptible.[18]

Aristotle tells us in Book XII of the *Metaphysics*[19] that certain forms remain after the corruption of the body, namely the intellective powers of the soul. How is this possible? Aristotle gives us the answer in Book III of the *De anima*.[20] Since the intellect alone is separated, it alone is immortal and eternal. Furthermore, in Book I of the *De anima* we learn that the soul has its own proper mode of action, since everything acts in the way it exists (*agere sequitur esse*).[21] Certain forms of the soul act not of themselves but only in conjunction with their matter. In this case, the form does not act, but the composite acts through its form. On the other hand, other forms operate independent of matter and therefore exist independent of matter. These forms are subsistent because they do not exist by means of the composite, but rather the composite exists by means of them.[22]

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[16] *Ibid*

[17] *Ibid.*, I, par. 28-30; Aristotle, *Physics*, II, 194b9-13, McKeon, *ed. cit.*, p. 240.

[18] Keeler, *op. cit.*, I, par. 31-33.

[19] Aristotle, *Metaphysics*, XII, 1070a22-24, McKeon, *ed. cit.*, p. 874.

[20] Aristotle, *De anima*, III, 430a22-23, McKeon, *ed. cit.*, p. 592.

Therefore, when the composite is destroyed, those forms existing by means of the composite are likewise destroyed; while the forms which do not depend upon the composite for existence will not be destroyed with composite but will continue to exist. In this way the intellect can be the form of a corruptible body.

Finally, in answer to the second objection, the essential nature of the soul is that it be united to a body. At death it is not the soul that is the impediment to this union, but the body on account of its corruptible nature. It is numerically and specifically one and the same soul that is united to the body in life and separated from the body at death.

V

St. Thomas now proceeds to verify and strengthen his proofs from Aristotle with the principles from reason.[23] For as Aristotle says, although we have given a comprehensive definition of the soul, we should not be content to stop here, but rather demonstrate it from its causes.[24] That every man is able to know and understand is an uncontestable fact. We would not be inquiring about the intellect unless we possessed some sort of intelligence. What could be more obvious than this? Therefore, there must exist some principle by which man is able to exercise the ability to know, some source of this power of understanding. Also, reason tells us that a thing acts by that whereby it is in act. Hence, if we define the soul as the first principle of our understanding, and if we know from experience that understanding is the principal act of the intellect, we are compelled to conclude that the possible intellect must be a part of the soul by which we first understand. Finally, if the intellective soul is the first principle by which we understand, it is also the form of the body because we know from reason that that by which we first operate is our form.

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[21] *Ibid.*, I, 403a10-12, McKeon, *ed. cit.*, p. 537.

[22] Keeler, *op. cit*, I, par. 36-40.

[23] *Ibid.*, III, 60-85.

[24] Aristotle, *De anima,* II, 413a13-16, McKeon, *ed. cit.*, p. 557.

St. Thomas, reasoning further, states that the phantasms are related to the possible intellect as color is to sight.[25] According to Averroes, the possible intellect is connected to man possessing in his imagination, phantasms whose intelligible species reside in the possible intellect. This is equivalent to saying that when one sees a colored object, the object itself is united with the eye in which the species of color resides. The logical conclusion of the Averroistic doctrine is that man does not understand, but he and his phantasms are understood by the possible intellect.

In order to avoid this difficulty, some make the union of the possible intellect and man the same as the union of mover and thing moved, i.e., they unite the possible intellect to man in its operation.[26] In this way the possible intellect is attributed to man as a part of him. St. Thomas says that such a premise presents difficulties.[27]

If the intellect were not the substantial form of the body, the act of understanding would not belong to man, but only to the separated intellect which makes use of man's body. This is evident because only in that union which is an *unum per se* is the action of a part of the action of the whole. If we say that the relationship between the separated possible intellect and man is the same as the relationship between a mover and the thing moved, the logical conclusion is then ridiculous. It is equivalent to saying that the saw uses or controls the artisan, since that is just what man would do when he exercised the act of understanding. Reason tells us that the action of the mover is not properly attributed to the instrument or thing being moved, but rather the action of the instrument is attributed to the principal efficient cause.

Furthermore, the act of understanding is an act which belongs only to the intellect; intellection can only be in an intellect, as vision can only be in the eye. Since there can be no vision except in one whose substantial form makes vision possible, it follows that the act of understanding cannot be attributed to a being who does not possess a substantial form which is intellective. Therefore, it is impossible to say that man understands and at the same time to say that the intellect is not the form of the body. How, then, St. Thomas says, can the act of understanding be attributed to Socrates, unless Socrates has a form which is intellective?

Finally, St. Thomas says that species is distinguished by the principal operation proper to that species. The proper act of man, in as much as he is man, is the act of understanding, since it is by this operation that he differs from and is elevated above the brute animals. And this principle by which man understands is his intellect.

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[25] Keeler, *op. cit.*, III, par. 63-64.
[26] Mandonnet, *op. cit.*, pp. 154-155.
[27] Keeler, *op. cit.*, III, par. 64-79.

Therefore, the possible intellect must be united to the body as its form, not indeed in such a way that it is the act of any bodily organ, but because it is a power of the soul which is the first act of a physical body.

VI

So far, St. Thomas has devoted his arguments to the defense of the Aristotelian teaching that the intellect belongs to the soul as its faculty. The Angelic Doctor now takes the offensive. He directly attacks the Averroistic thesis that the possible intellect is numerically one for all men.[28]

By postulating one possible intellect for all men, the numerical distinction of each man, as he is rational, is denied. It is the same as saying that there is one intellective soul for all men; or that there is only one substantial form for all men. As a result, all men would be numerically one and the same. But this is impossible. We know from reason and experience that rational souls must be numerically distinct; Socrates and Plato are not numerically one and the same person. To envisage one numerical power for a diversity of things is contrary to clear reasoning. Rational souls are numerically distinct and the possible intellect is the faculty of the soul. Thus, the possible intellect cannot be one for all men.

Although one principal agent uses many instruments, there is said to be only one operation even though the many instruments are employed. The same holds true from the possible intellect. It uses all the powers of the soul and all the members of the body. The possible intellect cannot be one for all men; if it were, we would be forced to conclude that there is only one intelligent being, one will, and one principal agent, using all the properties and attributes of the entire human race. All men would know the same thing in the same way and at the same time because there would be only one intellect and consequently one act of understanding. You and I would know simultaneously the same intelligible species. It is true that several men know specifically the same object, nevertheless, their understanding of the object is in proportion to the degree of the quantity and quality of their cognitive abilities. It would be as if every man possessed the same eye. Furthermore, every man would will the same things because there could be only one will for all men.

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[28] *Ibid.*, IV, par. 86-98.

Therefore, the doctrine of the unicity of the possible intellect is incompatible with sound reasoning and is an erroneous doctrine.

VII

In concluding his work, St. Thomas directs a final blow at Siger.[29] St. Thomas' sharp philosophical reasoning and cutting polemic are directed at the philosopher who would dare to hold that the intellect is one for all men. With indignation the Angelic Doctor exclaims, "quod aliquis Christianum se profitens tam irreverenter de christiana fide loqui praesumpserit."[30] That "he" should dare to dispute about a question which is outside the realm of philosophy and in direct opposition to Christian faith is worthy of the most merciless condemnation.

Finally, St. Thomas challenges him who would venture to contradict his sound philosophical arguments to put his answer in writing and not to retaliate behind locked doors or in the presence of intellectual children. Rather, let him challenge one who is capable and prepared to meet and refute his errors.

Bodly, strongly, soundly, St. Thomas has exposed the Averroists and upheld the truth of Catholic Tradition.

James Bischoff, O.P.

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[29] *Ibid.*, V, par. 122-123.
[30] *Ibid.*

UNLESS SOME LIGHT BE GIVEN

One of the greatest promises that man has ever received is that he will see God face to face. This vision will constitute eternal life. What joy and love await for us in this vision, no one can express. Once we possess this vision, nothing will be able to destroy it or even diminish it because there will be so strong, so absolute a love of God accompanying it. We know that when God shall appear we shall be like to him. We shall see him as he is.[1] This vision will not be like the reflections of his perfections that are obvious in his creatures; we shall see him immediately as He is in himself.

This great promise is a mystery to man. Man can never have an idea of what God is, for no idea can perfectly represent him. Man is limited and restricted to what he can know about God. The intellect of man can only know created things because this is man's way of knowing. Anything supernatural is completely above the nature of man. Unless supernatural truths are revealed, man cannot know God. If man is to know God, his nature must be given powers, strengthening powers to say the least, to know things supernaturally. Since man knows God by means of his intellect, the intellect of man must be strengthened. It must receive something which is above his nature. For this very reason, unless a power is given to the intellect, the divine essence in no way can be seen, neither can it be conceived.[2]

This strengthening power is called the light of glory. The necessity of this light is simply this: to perfect, to elevate, to strengthen the intellect to see the vision of God. In seeking what this light of glory might be—this light which renders the intellect of man able to see God—three things must be determined: the existence of this supernatural light by which the human intellect is able to be united to God; the nature or essence of this light, and the functions of this light.

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[1] 1 John 3:2.

[2] St. Thomas, *Summa theologiae,* I, q. 12, a. 2.

The necessity of the light of glory is *de fide*. The Council of Vienne condemned the view of the Beghards which stated that any intellectual nature is naturally blessed in itself and that the soul does not need the light of glory elevating it to see God and enjoy him in this blessed state.[3] The *de fide* proposition is just the reverse. The affirmative proposition of the Beghards, that any intellectual nature is naturally blessed in itself, is couched negatively by the Council: no intellectual nature is naturally blessed in itself. Accordingly the negative proposition of the Beghards, that the soul does not need the light of glory elevating it to see God and enjoy him in this blessed state, receives an affirmative answer by the Council: the soul needs the light of glory to see and enjoy God.

Sacred Scripture aids in establishing the facts that the vision of God infinitely surpasses any intellectual nature and that without a help from God—his grace, his light—man cannot see him. Sacred Scripture teaches that God is invisible,[4] his dwelling is in unapproachable light; no human eye has seen or can ever see him,[5] except him (the son of God) who comes from God; he alone has seen the Father.[6] Secondly, Sacred Scripture tells us that man shall see God, and shall see him as he is.[7] At present, we are looking at an obscure reflection in a mirror, then we shall see face to face, now I have only glimpses of knowledge, then I shall recognize God as he has recognized me.[8] Thirdly, when we shall see him, the vision will not be from our own human powers and resources, for we read of things no eye has seen, no ear has heard, no human heart conceived, the welcome God has prepared for those who love him.[9] The promised vision is gratuitously given to man for "I will manifest myself to him."[10] Fourthly, only by the grace of God shedding his light on man shall they see his face, his name written on their foreheads. There will be no more night, no more need of light from lamp or sun. The Lord God will shed his light on them, and they shall reign for ever and ever.[11]

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[3] Denz. 475.
[4] 1 Tim. 1:17.
[5] 1 Tim. 6:16.
[6] John 6:46.
[7] 1 John 3:2.
[8] 1 Cor. 13:12.
[9] 1 Cor. 12:19.
[10] John 4:21.
[11] Apoc. 22:4-5.

The teachings of Sacred Scripture, that God is invisible, that we shall see him, though not by our own powers but by his grace, that we shall see him by some light which he shall shed on us, manifest that unless God gives man the power of seeing, man cannot see him.

The necessity of the light of glory in the event of seeing God face to face is clear from a study of knowledge. Such a study shows that for true knowledge to exist, the knowing faculty, the medium of knowledge, and the object known must be in the same order. That is, they must be proportioned to one another. The eye can see only things which are colored—a blue sky, green trees, a red rose. The eye sees these colored objects by means of a physical light. Hence, the eye being a physical faculty sees a physical colored object by means of a physical light.

The intellect of man knows natural truths, that good must be sought. Food is needed to keep alive, clothing is needed to keep the body warm and shelter is needed from cold weather. Man naturally knows that evil must be avoided: murder, lying, and stealing. Such moral truths man knows naturally. Also he knows intellectual truths naturally, that the whole is greater than its parts—a whole pie is greater than a single piece of pie. The intellect knows these natural truths by the natural light of reason. Hence, man's intellect being a natural faculty knows natural truths by means of a natural light.

We find the same procedure when the intellect knows supernatural truths such as the Trinity, the Incarnation and the Redemption. The intellect knows these supernatural truths by means of a supernatural light, the light of glory. Hence, the intellect being a natural faculty, presupposing it has been strengthened and elevated—a function of the light of glory which will be discussed later—is a deified power knowing supernatural truths by means of a supernatural light, the light of glory.

It is clear from citing the required proportion between the knowing faculty, and the medium of knowledge, and the object known that what we know through sense knowledge—the knowledge which is obtained by the eye, ear, smell, taste, touch, common sense, imagination, memory, the estimative power—depends upon a sensible light. Accordingly intellectual knowledge depends on an intellectual light and supernatural knowledge depends on a supernatural light. Since knowledge is essentially a vital act of the one knowing and the vital act is essentially spontaneous, the knowable light is necessarily and intrinsically in the knower. As the sensible light by which a man senses is necessarily and intrinsically in him when he senses, so also the intellectual light by which a man knows is necessarily and intrinsically in him when he knows naturally, and the supernatural light by which a man knows is necessarily and intrinsically in him when he knows supernaturally.[12]

Since the natural and supernatural are essentially different orders, their objects and their media of knowledge are going to be diverse. God, however, is the object of supernatural knowledge. No creature can have such an object of knowledge as something natural to him since creatures can only know created things naturally—such is creature's way of knowing. Unless God gives the light of glory, making the proportion between the knowing faculty (man's intellect), the medium of knowledge (light of glory) and the object known (God), man cannot know, man cannot see God as he is.

When we inquire about the nature or essence of the light of glory, we must remember that this light is something essentially supernatural. It cannot be acquired because it is completely out of the scope of all natural powers. We must say that it is something infused. However, the light of glory must be in man's intellect, inherent in the intellect, otherwise God could not be seen. Since this light must be necessarily and intrinsically in man's intellect in order to know supernaturally, such a light must be in man as something permanent and connatural to his intellect. The reason for this is that any intellectual light that is in a subject must be present to the intellect by way of an abiding and perfect form since the light perfects the intellect to the effect of knowing the principles of the things manifested by that light.[13] Now the principle of things pertaining to supernatural knowledge is God himself, whom the blessed see in heaven, and in whom this light is by way of an abiding and perfect form.[14] Such an abiding and perfect form which must necessarily and intrinsically be in man's intellect to know supernaturally is best described as an infused habit enabling the intellect to understand in the same way as a habit makes any power more able to act.

A habit is a principle of operation informing and perfecting the power in which it resides, making the performance of the operation easy, firm, prompt and delightful. Since the light of glory informs and perfects the intellect enabling it to understand supernaturally, the actual presence of this informing light renders the intellect able to exercise its act of seeing God easily, firmly, promptly and delightfully. Therefore, the light of glory, as a habit essentially supernatural, necessarily and intrinsically inheres in the intellect as an abiding and perfect form, perfecting and informing the intellect so that it can see and enjoy God, the object of its knowledge.

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[12] J. M. Ramirez, O.P., *De Hominis Beatitudine* III (Madrid: Consejo Superior, 1947), pp. 432-3.

[13] *Sum. theol.*, II-II, q. 171, a. 2.

[14] *Ibid.*

Such a habit can be conferred in two ways. First it can be conferred in a permanent way which is proper to the blessed in heaven where the vision of God is immediately seen. When this light is conferred on the blessed in heaven, the light of glory is connatural to the operation of the intellect. There is perfect conformity and proportion between the intellect, medium of knowledge and the object known. The light now inheres in the intellect as an abiding and perfect form which cannot be lost because it is permanent. The act of seeing God in heaven becomes an exercise which is easy, firm, prompt and delightful: easy because the vision of God is seen without any labor or impediment; firm because it continues to exist for all eternity without any intermission; prompt because the vision of God is always present; delightful because the glory of the vision will be so wonderful and enjoyable that man will be completely satisfied.[15] The light of glory makes man simply blessed, simply happy.

The second way the light of glory can be conferred is miraculously, that is, it is conferred upon man while still in this life. Some medieval exegetes believed that Scripture implies that Moses and St. Paul saw God in this life. How do we reconcile this when the light is something permanent in a subject? In heaven we have this light permanently and habitually which makes man simply blessed. If, by the grace of God, the light of glory is conferred in this life, it must be in man differently. Certainly it cannot be a permanent habit or a perfect state. Neither is it something connatural to the intellect. If the light of glory is conferred on someone in this life, it is only by way of a privilege. It is miraculously conferred. Since it is not something permanent and abiding, it can only be in the intellect as something which comes and goes, remaining only for a certain limited duration. Because the light of glory conferred in this life is not a permanent habit, it is specifically different from the habit of glory man will have in heaven.[16] However, even if God is seen in this life, the intellect must be strengthened and informed by the light of glory in order to see him.

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[15] Ramirez, *op. cit.*, pp. 451-2.

[16] *Ibid.*, pp. 462-3.

Because the light of glory can be conferred in two ways, the functions of the light of glory will also have diverse formalities. One formality will be common to all in any subject and under any state. The other formality will be proper to the nature of the light of glory as it will be in heaven and as it is proper to man as the light is miraculously conferred while still in this life.[17]

The first function of the light of glory is to dispose man's intellect so that the divine essence itself can be immediately united to the created intellect as its intelligible form.[18] The reason for this is that knowledge cannot take place unless there is a union betwen the intelligible object (God) and the knower (man's intellect).[19] Unless God is present to the intellect, there is no knowledge. Now God is supremely knowable, supremely intelligible in himself;[20] no other intellect can know him as he knows himself. No disposition is required on the part of the object known (God) since he is supremely intelligible.[21] He completely surpasses any created intellect, even the angels'. Since God is an object supremely intelligible, no created objective similitude can perfectly represent him. Therefore, the knowing faculty, the intellect, must have some subjective similitude of God enabling man to see and know God.[22] The whole disposition whereby the divine essence is united to the created intellect as an object actually understood centers upon the part of the created intellect.

Since the divine essence is the proper intelligible form of the divine intelligence, the divine essence alone is proportiond to it; for in God that which understands, that whereby it understands and that which is understood are one. It is impossible for the essence of God to become an intelligible form to any created intellect unless it become a partaker in some likeness to God.[23] For God to become the intelligible form of the created intellect, a light which is a principle of divine knowledge is absolutely and essentially required.

It is clear that the knowledge of every knower is ruled according to its own nature. If the knowledge of some object exceeds the nature of the one knowing, such knowledge is above the nature of the one knowing. Now our intellect by its own nature is elevated above matter. It can know immaterial things. If the intellect is raised up to what exceeds its nature, it must be prepared by some disposition above its nature.[24] Such a disposition cannot be natural, rather it is *toto caelo* above nature. In order that the created intellect see God, that God become the intelligible form of the intellect, it is going to require some supernatural disposition which is added to the intellect to make it possible to be raised up to such a sublime height.

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[17] *Ibid.*, p. 464.
[18] *Sum. theol.*, I, q. 12, a. 5.
[19] *Ibid.*, a. 2.
[20] *Ibid.*, a. 1.
[21] *Ibid.*, a. 2 ad 3.
[22] *Ibid.*, a. 2.
[23] *Sum. cont. gent.*, III, c. 53.

Because this disposition is not from a natural power, for no natural power is able to see God, the disposition must be through something supernatural, namely the light of glory. And the light of glory can only be given by God. Once the light of glory is given, immediately the proportion between the object (God) and the knower (intellect) is achieved: God and knower are united. Immediately God is understood. Immediately the intellect understands. Once the light of glory is received, the intellect not only has an active power to see God but is adequately disposed to be united to the divine essence from which follows actual understanding.

This work of the light of glory—disposing the intellect for union with God—is none other than an immediate presence of the intellect with God.[25] Without this presence, the intellect could not conceive God. Without this disposition there would not be vision. Without this disposition there would not be proportion between God and the intellect. But with this disposition, God and the intellect are able to be of one order. The act of seeing God and of knowing God becomes connatural to the intellect just as knowing natural truths by the light of reason is connatural to man's intellect.

The first function of the light of glory is to dispose the created intellect for its union with God. Only when this function is fulfilled can the intellect be united with God as its proper intelligible form. The second function of the light of glory is to make the intellect deiformed, similar to God.[26] However, this second function presupposes the adequate disposition of the union between God and the intellect, the adequate disposition of the necessary proportion between object and intellect, and the adequate disposition for making the intellect of the same order with the divine essence. The second function formally makes the intellect deiformed, makes it perfectly and intelligibly proportioned and essentially of the divine order. Since the light of glory is connatural to God alone, it becomes connatural to a created intellect once the light is communicated. The light informs, perfects and elevates the intellect so that it can see God face to face. In informing the intellect, the light strengthens the intellect so that it can elicit the act of vision, so that it can see God intuitively. Without this strengthening light, the intellect would be destroyed by the immediate vision of God. Therefore, God communicates the light of glory which gives the intellect the necessary strengthening power in order to see him as he is, to become similar to him. For the intellect to become deiformed is essential for seeing God, and the light of glory has this as its second function.

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[24] *Sum. theol.*, I, q. 12, a. 5.
[25] Ramirez, *op. cit.*, p. 466.
[26] *Sum. theol.*, I, q. 12, a. 5.

With the intellect properly disposed to be united to God, and with the intellect strengthened so that it is similar to God, the third function comes into play. Through the third function the act of vision is elicited and becomes one with the informed and elevated intellect. The intellect elicits the vision efficently through the light of glory. Indeed, the light of glory becomes the operative habit, an efficient principle of operation, in the intellect. Because this habit of glory is superadded to the intellect, the operation and its act of seeing God face to face are perfect and connatural to the intellect. Without the superadded power enabling the act of vision to follow as something perfect and connatural, the intellect becomes capable of eliciting the act of the vision of God only through the information and elevation of the light of glory.

In a summary form we can list the functions of the light of glory in this way: first, the light is necessary that the intellect be disposed to receive and to be united to the divine essence; secondly, it is necessary that the intellect be deiformed, strengthened, and made similar to God by this light; thirdly, that the act of vision of God can efficiently be elicited through this light. Such are the functions of the light of glory, perfecting the intellect to know God, perfecting the intellect to see God, strengthening it to see God, offering the intellect a most efficacious power of possessing and enjoying the glorified vision of God.

The necessity and existence of the light of glory, the nature of the light of glory as it will be in heaven and as it is miraculously conferred in this life and the functions of the light of glory have been shown. What the light of glory is, what the light will do to the intellect, how it will abide in the intellect when it is united to man remain as something to be experienced once the face to face vision of God is given to man. The light of glory is a mystery. Natural reason cannot completely understand what it is definitely because this light is beyond any human comprehension. Whether the light of glory is a habit is not *de fide*. What we do know infallibly is that the light of glory is necessary for the vision of God. Unless God gives some light, namely the light of glory, man is incapable of seeing him as he is.

Kevin Thissen, O.P.

ST. THOMAS ON PRIVATE PROPERTY

In a world so imbued with the spirit of materialism, it is not surprising that there exists today a great conflict between the two towering giants of material strength which are diametrically opposed in their philosophy of economics: the United States (and its allies) with its spirit of individualistic capitalism, and the Soviet Union (and its satellites) with its system of communism. The central issue of this great ideological struggle, in economic terms, is whether property and wealth should be in the hands of private capitalists or in the hands of the public, communistic state.

Yet, the struggle goes deeper than this: there is another, more basic issue which is at stake. In reality, excessive capitalism and its counterpart, socialistic communism are on the same side of the fence in the more fundamental struggle between private greed, on the one hand, and personal liberty and the common good on the other. Both exaggerated capitalism and communism deny to the human person the private property without which he is neither completely free as a human being, nor sufficiently able to provide for the necessities of life and its natural ends. The one, communism, denies to the individual, by law, this basic right to private property; the other, excessive capitalism, denies the same by exploitation. In both economic systems the individual is crushed.

What is common to both of these extremes which have produced so many modern social evils is the patent fact that each has secularized the sphere of economic activity and has denied moral science its rightful place there. Communism, as we know it today, has rejected the existence of morality altogether; western capitalism has relegated it to the realm of private activity only. In each, all activity in economics is carried on in terms of expediency: it is an impersonal "mechanism adjusting itself through the play of economic motives to the supply of economic needs."[1]

It would be of great avail to retrace the steps of human history some seven hundred years and consider a period and society in which economics was not divorced from personal and social morality; in which religion and ethical standards, not mere expediency, were used; and in which it was the individual, not wealth and production, that was important.[2] The medieval economic teaching, which had a great influence on this society, was expressed and synthesized, above all, in its most brilliant thinker, St. Thomas Aquinas. Although the social and economic structure of the Middle Ages is radically different from our modern society, we are still human beings with the same ends and the same rights, and bound by the same principles of morality. It is here, in the realm of morality, and particularly of social justice, that the medievalist can teach us and guide us on the road to recovering order and justice in society.

THE ECONOMIC THOUGHT OF ST. THOMAS

Thomas Aquinas, the great scholastic of the 13th century, lived in a period that was rapidly changing, both intellectually and socio-economically. In the early Middle Ages, a system of feudalism prevailed over the whole of Europe with its corresponding agricultural, domestic economy. Trade and industry were at a minimum; there were no large commercial markets; money was scarce and unproductive. Add to this fact of little economic activity a prevailing attitude of "ascetic aloofness"[3] concerning economic matters (the very idea of money-making and material gain being held in disrepute), and one can see why little or no thought was given to specifically economic questions.

Then at the beginning of the 11th century began a period of great expansion—political, economic, and military.[4] The greatest stimulus to this general movement of expansion was the Crusades. They had a profound effect on the medieval economy:

> The Crusades greatly stimulated the western European economy. Shipping and commerce increased by leaps and bounds. New tastes and demands were fostered, new trading contacts and posts established,

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[1] R. H. Tawney, *Religion and the Rise of Capitalism* (New York: Harcourt, Brace, 1926), p. 13.

[2] George O'Brien, *An Essay on Medieval Economic Teaching* (London: Longmans, Green, 1920), p. 8, 24-25.

[3] Tawney, *op. cit.*, p. 18.

[4] Thomas P. Neill, Daniel D. McGarry, and Clarence L. Hohl, Jr., *A History of Western Civilization* (Milwaukee: Bruce, 1959), vol. I, p. 297.

> bigger and better ships constructed, and the fleets of the North Italian maritime cities grew to number thousands of vessels. Money came to be in great demand, coinage multiplied, and banking and credit expanded.[5]

With this commercial revolution in the High Middle Ages there was necessarily a greater preoccupation among the scholastics with economic matters; new moral problems had to be solved; economic expansion and the traditional morality had to be reconciled.[6]

There was also another revolution in the 13th century: the intellectual one effected by the "new learning" of the Arabs and Greeks, especially Aristotle, which had come into the Latin West through the 12th century translations. With the new translations of the *Ethics* and *Politics* of the Stagirite, the first philosophical treatises on social ethics available to the Middle Ages, there arose a new interest in economic questions. St. Thomas, following his master, St. Albert the Great, was quick to appreciate the value of Aristotle. Being himself, not only a speculative thinker, but also a very practical man concerned with the concrete problems of his time, it was Thomas' task to formulate an Aristotelian-Christian synthesis by which he could establish a framework within which there could be a harmony between the new economic activity and the traditional principles of Christian morality. "The completeness with which the work was done gives Aquinas a permanent place among the great intellects of history."[7]

For St. Thomas the whole issue in economics as in all social relations is one of justice: justice is the norm which must guide all our activities with others. It is in the question on justice in the II-II of the *Summa theologiae* that St. Thomas considers such things as property, the just price and usury. Such questions are dealt with specifically under commutative justice. But communtative justice implies private property; therefore, says Father O'Brien, "the whole fabric of medieval economy was based on the foundation of private property."[8] And the basis, nature and limitations of property right formed an integral part of the whole medieval thought on government and law.[9]

The question concerning private property was a long debated one in the history of human thought. But in St. Thomas' time the controversy over whether it is right for a Christian to own private property and what are the limits of this right became especially heated when the so-called "Spiritual Franciscans" declared that private ownership is incompatible with Christian perfection and thereby came into conflict with Pope John XXII, who upheld the legitimacy of private property.

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[5] *Ibid.*, p. 309.

[6] Tawney, *op. cit.*, p. 31.

[7] John W. McConnell, *The Basic Teachings of the Great Economists* (New York: New Home Library, 1943), p. 6.

[8] O'Brien, *op. cit.*, p. 39.

[9] Ewart Lewis, *Medieval Political Ideas* (New York: Alfred A. Knopf, 1954), vol. I, p. 88.

For the solution of this problem St. Thomas had a long and wide tradition from which to draw, besides the newly arrived philosophy of Aristotle. It was his genius to see the two as complementary, and to synthesize them into a social doctrine which the Church still embraces today. Before we expound St. Thomas' doctrine on private property, then, let us first see briefly the tradition upon which he built.

THE HISTORICAL BACKGROUND

The basic traditional source for St. Thomas was the Christian tradition primarily contained in the Bible, the living Church and the Fathers. But there was also the legal tradition, both civil and ecclesiastical, which shaped the system of feudal law in the early Middle Ages, and which tried to adapt itself to the social and economic changes in the later Middle Ages.

Early Christianity and the Fathers

The attitude of the primitive Christians concerning property was derived from the teaching of Jesus Christ Himself. For the first Christians, imbued with the spirit of their Master, the whole matter of property was now on a spiritual plane, and its worth was esteemed in terms of providing an opportunity to practice charity and liberality.

But, however much Christ and the early Church stressed the "spirit" of poverty and the duties of charity, it would be wrong to say that they denied the right of private ownership. Christ Himself taught and urged the practice of virtues for which private property is essential. Even if we do grant that the primitive Church practiced a system of communism, (described in Acts 4:32-35, in which nobody owned privately)—many reputable students of the Bible and Church history interpret it, not as a systematic communism, but merely as an emphasis on the practice of charity and liberality among the first Christians—nevertheless, the Christian must have found it a failure; for it was never practiced by any civil Christian community afterwards (excepting religious communities of monks) and it certainly was not imposed by the Church.[10]

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[10] O'Brien, *op. cit.*, pp. 44-48; John M. Ferguson, *Landmarks of Economic Thought* (New York: Longmans, Green, 1938), p. 16; Frank Grace, *The Concept of Property in Modern Christian Thought* (Illinois Studies in the Social Sciences, Vol. XXXIV, Nos. 1-2. Urbana: University of Illinois, 1953), p. 15.

When we look at the teaching of the Fathers, we again find that their whole thought on property is dominated by Christ's commandment of fraternal charity; they are quick to emphasize the "community" of goods among men and the perfection that can be attained in voluntary poverty. But on closer examination we see that they are simply stressing the "social" function and obligations of private property, not denying its legitimacy as a human institution.[11]

But the Fathers, on the whole, did not believe that the origin and basis for the institution of private property belonged to the natural law. For them, private property, as the State itself, had its origin in original sin and did not exist in the primitive state of innocence. Because of the greed for power and wealth that became ingrained in human nature after the Fall, it was necessary for human positive law to create such institutions as government and private property, in order to remedy the sinful state of man and check his inordinate desires. Therefore, the institution of private property does not flow from man's true nature, but rather is the result of sin. But it is not merely conventional; it is necessary for human society and, in fact, a divine remedy for sin.[12]

This position is clearly expressed by St. Ambrose in his treatise *De officiis*: nature gave men the goods of this earth for their common use; the natural right to property is a common one—only use and habit produced private right.[13] He says elsewhere that as God meant the goods of earth to be the common possession of all, it is only just that one should support the poor out of his own goods, since these goods were meant for all mankind.[14]

St. Augustine upholds the right of private property against the Donatists, who tried to justify their confiscation of churches and other property. But he, too, is explicit in relegating it to human law. He also limits the right of property but the use to which it is put: one who uses it badly has no right to it.[15]

The patristic theory of property, then, was that private property is necessary but not natural in the context of pure nature. It is the common right of property that is given by nature. This is an anterior right and outweighs the right to private property originating in positive human law.

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[11] O'Brien, *op. cit.*, pp. 60-61.

[12] R. W. Carlyle and A. J. Carlyle, *A History of Medieval Political Theory in the West* (New York: Barnes & Noble, 1928), vol. V, p. 10.

[13] St. Ambrose, *De off.*, i. 28. Cited by Carlyle, *op. cit.*, I, 136.

[14] St. Ambrose, *Com. on Ps CXVIII.* 8. 22. *Ibid.*, p. 137.

[15] St. Augustine, *Epist.*, XCIII. xi. *Ibid.*, p. 140.

The Legal Tradition

Contrary to the opinion of the Christian Fathers, many of the great Roman jurists held that property was a natural institution, not a positive one, although they were divided in their opinion as to whether it belongs to the *jus naturale* or the *jus gentium*.[16] This view of the Roman lawyers which saw property as something natural was consistent with the existing legal code in the Roman Empire in which the ownership of property was considered as absolute and completely personal. Almost no restrictions were imposed on one's property rights; ownership was indivisble and unique.[17]

In the medieval feudal system, on the other hand, ownership of land was not complete or absolute, but rather "conditional." That is, it was conditioned by the discharge of duties connected with the land.[18] One huge piece of land would be held under a series of "lordships" from the king all the way down to the peasant. The king had original and "legal lordship," but others would acquire secondary lordships as the king apportioned the land to vassals, in return for certain services to be rendered on their part. The vassal in turn had peasants under him who worked the land and were given a little land of their own for their own sustenance. Even the king, theoretically, held his power and lordship on conditional terms. There was a social contract between the king and his subjects: he would preserve law and justice; the people promised obedience. If either broke his promise, the respective rights were thereby abrogated.[19]

When the feudal system began to break down in the face of the commercial revolution which had its impetus from the Crusades, so also, the old notions of property right and ownership began to fade. There was a transition from feudal estates to private land tenure; conditional ownership ceased when men broke away from the old feudal pattern of landlord and peasant and formed into new communities with their wealthy merchants and artisans. These new entities obtained their independence from the Pope or emperor by means of charters or constitutions.[20] Land was no longer merely let out for hire in terms of services, but bought and sold according to its own value and held directly by the buyer. When money replaced land as the symbol of wealth, there came a new sense of absolute ownership.[21] Thus as feudalism went out and capitalism came in, property gradually lost its "community sense" and took on new, individualistic connotations.

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[16] Carlyle, *op. cit.*, pp. 51-54.

[17] Lewis, *op. cit.*, p. 89.

[18] Bede Jarrett, O.P., *Social Theories of the Middle Ages* (Westminster, Maryland: Newman, 1942), p. 131.

[19] *Ibid.*, pp. 132-33.

[20] Barbara Ward, *Faith and Freedom* (New York: Image Books, 1958), p. 87.

During all this social, economic change the traditional theory on property rights was retained. While the medieval civilian jurists, those at Bologna being foremost, seemed to waver between the natural law position of the Roman lawyers and the positive law position of the Fathers,[22] the Church canonists held to the patristic teaching. This tradition is repeated and synthesized in Gratian's *Decretum.* The doctrine is that all things are common by nature; private property is a need which arose because of man's disordered concupiscence following original sin, and therefore has its origin in human law; finally, the right of each man to those goods necessary to fulfill his existential needs takes precedence over another's personal right to private property. From this theory two principles followed: a man has a right only to that amount of property that is necessary to his state in life; and a man has a right only to what he makes good use of.[23]

This, then, was the picture when St. Thomas began to consider the problem. As a Christian, he could not ignore tradition; as an Aristotelian, he could not ignore philosophical principles which he knew to be in accord with reason and reality. But if Christianity and Aristotle seemed to be in conflict, St. Thomas would show that they could be put in harmony.

ST. THOMAS' THEORY OF PROPERTY

St. Thomas specifically treats the question of property in the *Summa theologiae;* though *ex professo* a theological work, there is contained therein philosophical arguments, and it is these arguments which we will attempt to expound and clarify here. His main doctrinal argumentation concerning the natural possession of the goods of this earth and the necessary division of property is found in his *Commentary* on Book II of Aristotle's *Politics,* where the Philosopher, discussing Plato's ideal state, criticizes Plato's stand on communism and gives his own arguments for private property. There are also valuable texts from St. Thomas in the *Contra gentiles* and other parts of the *Summa* which make clear his position on property. As is characteristic of Aristotelian-Thomistic methodology, St. Thomas goes back to the nature of things—i.e., the nature of man and the nature of material goods—and there derives his principles.

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[21] Jarrett, *op. cit.,* pp. 141-42.
[22] Carlyle, *op cit.,* II, 41-49.
[23] *Ibid.,* pp. 136-42.

The Right of Dominion

In the tract on justice in the II-II of the *Summa,* St. Thomas treats of property under the question on theft (q. 66); for there would be no such thing as theft if there were no property rights. He first asks the question (art. 1): whether it is natural for man to possess the exterior goods of this earth. In other words, does man have a special dominion over the other creatures which God has created? First we should ask ourselves what St. Thomas means by "dominion"; this is the term that he uses, above all, in speaking of the right of property.

Meaning of dominion. By "dominion" Thomas is designating the *subjective* right of the possessor over the thing possessed. "Possession" expresses, in a passive sense, the thing over which dominion is had, and in an active sense, the actual exercise of dominion.[24] Dominion is an analogous term for St. Thomas: it can express a person's dominion over his acts, or it can express the dominion of a ruler over his subjects. In its most proper and perfect sense, however, it refers to man's complete dominion over external goods and it is expressed in the formula, "potestas procurandi et dispensandi" (q. 66, art. 2). This is also what Thomas means by the term "proprietas."[25] In this formula is included all the acts connected with managing, administering, using and distributing property:[26] it is the faculty of disposing or using a thing for one's own profit (*in proprium commodum*).[27]

The *object* of man's dominion is threefold: the goods of the body (e.g., health), the goods of the soul (e.g., knowledge), and external goods. The question of property, however, deals only with external, material goods which are the most proper object of human dominion. The *subject* of this dominion is man alone, for he is the only creature on the face of the earth with the power, by reason of understanding and free will, of disposing and using inferior beings for his own good.[28] So man has the power, but does he have the right of dominion? This is what St. Thomas asks in the first article.

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[24] Teofilo Urdanoz, O.P., "Introduction A La Cuestion 66," *Summa teologica de Santo Tomas de Aquino,* edited by the Spanish Dominican Fathers of the University of Salamanca, vol. VIII (Madrid: Biblioteca De Autores Cristianos, 1956), pp. 474-75.

[25] Urdanoz, *op. cit.,* p. 475.

[26] "Potestati vero privatarum personarum subduntur res possessae; et ideo propria voluntate in his possunt sibi invicem communicare, puta emendo, vendendo, donando et aliis hujusmodi modis." (St. Thomas, *Summa theologiae* [ed. Leonina, *Omnia Opera,* vol. IX, Rome, 1897], I-II, q. 105, a. 2.)

[27] Urdanoz, *op. cit.,* p. 474.

The right of possession. St. Thomas is quick to point out, in his answers to the three objections posed in article 1, that God has the primary and principal dominion over all created things, since He is their Creator. But this is not to exclude a human dominion over the same. We can consider exterior things in two ways: as to their nature and as to their use. In the first case, it is obvious that external things are not subject to human power but only to the divine, creative power to which all beings are subject.[29] God, then, having full power over the very being and ordination of all things, is the supreme and principal Lord of the world.

But God made man in His own image and likeness according to man's rational nature (*secundum rationem*). In this image He has communicated to man a participation in His dominion over other, lower creatures. For "in rerum ordine imperfectiora sunt propter perfectiora."[30] Minerals exist for the sake of plants, plants for the sake of animals, and animals for the sake of man; "it is manifest that nature made the plants and animals for the sustenance of man. But when anyone acquires that which nature made for himself, it is a natural acquisition."[31]

With this in mind, we can state two fundamental reasons why man has a natural dominion over the goods of this earth and the right in turn to possess them: (1) his rational and volitional nature by which he has the power to dispose and perfect lower things and use them for his own good;[32] and (2) man's need to possess the goods of this earth for the most basic "art of living." Man provides for his existential needs in familial society, and therefore he has a natural right to all those things that necessarily go into the management of a household, both for present and future needs. Thus Aristotle and St. Thomas say that "possessions are part of the household and the possessive art is a part of economics."[33]

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[28] *Ibid.*, p. 475.

[29] "Uno modo, quantum ad ejus naturam: quae non subjacet humanae potestati, sed solum divinae, cui omnia ad nutum obediunt." (*Summa theol.*, II-II, q. 66, a. 1.)

[30] *Summa theol.*, II-II, q. 64, a. 1.

[31] ". . . ergo manifestus est quod natura fecit animalia et plantas ad sustentationem hominum. Sed quando aliquis acquirit id quod natura propter ipsum fecit, est naturalis acquisitio." (St. Thomas, *In Libros politicorum* [ed. Parmae, *Omnia Opera*, vol. XXI, Parma, 1866], I, lect. 6.)

[32] *Cf.* St. Thomas, *Contra Gentiles*, Bk. III, Chap. 112.

[33] "Possessio sit quaedam pars domus et ars possessiva sit pars oeconomiae." (*In I Pol.*, lect. 2.)

As it is necessary for any art to have suitable instruments, so possessions are the instruments for the art of maintaining life.[34]

Therefore, says St. Thomas, while God, the Creator and Conservor of nature, has *dominium naturae* over the things of this earth, man has *dominium naturale* over the same *quantum ad usum ipsius rei.*[35]

The Right to Private Property

We have seen above that it follows from the natural law that man has a right of dominion over the goods of this earth. But the *jus naturale* stops here: it does not determine how this right of dominion is to be exercised—by community property or by private property. Since each man has an equal right to possess the goods of this earth,[36] do I, then, have the right to call anything "mine," or must I refer to something only as "ours." This is the real question, and St. Thomas takes it up in the second article of question 66.

The lawfulness of private property. That it is lawful for man to possess property as his own, follows directly from the first article where St. Thomas proves that man has a habitual dominion over other creatures. The lawfulness of private property is connected with the very nature of man: (1) as a creature with intellect and free will, it belongs to man to perfect rationally and dispose freely external things: external possessions serve as a basis for the development and activity of the human personality: private property answers man's creative desire which seeks to find expression in the world about him; (2) a rational creature is a providential creature; man does not live "from hand to mouth" like the rest of animals, but provides for himself and his family in a secure and stable manner; such security and stability come only from private property which, as we saw above, is included in the art of managing a household.[37]

Aristotle and St. Thomas add two other reasons why private possessions are natural and lawful for man. One is the natural desire man has for personal property; this desire flows from a natural self-love—a well-ordered self-love that is not vain or excessive. Such a natural desire would be frustrated in a communistic community.[38] Secondly, there is another natural inclination that could not be realized in a communistic state: the desire to help one's friends and relatives in their material needs. Good men would be unable to exercise the virtue of liberality.[39]

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[34] "Videmus enim quod unicuique arti necessarium est habere convenientia instrumenta, si debet perficere opus suum. . . . Et hoc modo gubernatori domus necesse est habere res possessas ad proprium opus sicut quaedam instrumenta." (*In I Pol.*, lect. 2.)

[35] *Summa theol.*, II-II, q. 66, a. 1.

[36] Urdanoz, *op. cit.*, p. 478.

[37] *Cf.* p. 15.

The necessity of private property. We have been considering man in his individual nature, and we have seen that the lawfulness of private property is guaranteed by man's reason. But now, if we consider man as he is a member of society, living in community in which there are conflicts of interest, we can see that the institution of private property is not only legitimate but even necessary for human life; therefore, it is natural because society is natural. St. Thomas gives three reasons why a system of private property is necessary for human society.

The first reason refers to the care that is given to external goods:[40]

> Because every man is more careful to procure what is for himself alone than that which is common to many or to all; since each would shirk the labor and leave to another that which concerns the community.

Aristotle and Thomas Aquinas knew human nature well enough to realize that when the goods of a community are owned in common, and therefore, their care and development belongs to the responsibility of the whole community, it usually ends up that each one leaves the responsibility to the others and nothing gets done. This is a fact of experience.

The second reason he gives is again taken from a fact of experience:[41]

> Human affairs are conducted in more orderly fashion if each man is charged with taking care of some particular thing himself, whereas there would be confusion if everyone had to look after things indeterminately.

To have order in society demands that there be a clear demarcation between "mine" and "thine."

The third reason is closely connected with and follows upon the second:[42]

> A more peaceful state is ensured to man if each one is contented with his own (*re sua*). Hence it is to be observed that quarrels arise more frequently where there is no division of the things possessed.

The confusion that would reign in society when exterior goods were owned indiscriminately would necessarily result in conflicts and a disruption of social peace. Many might have care of one thing, but each would have his own ideas as to how it should be handled, or there would be something for everybody but no agreement as to who should get what. The very end that Plato was working for, i.e., unity in society, would be even more hindered in his communistic state in which nothing is privately owned: ". . . if all citizens had all possessions in common, more strifes would exist among them."[43]

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[38] *In Pol.*, II, lect. 4.

[39] *Ibid.*

[40] *Summa theol.*, II-II, q. 66, a. 2. Translated and quoted by Aegidius Doolan, O.P., *Order and Law* (Westminster, Maryland: Newman, 1954), p. 174.

[41] *Ibid.*

[42] *Ibid.*

Now if anyone objects that private property itself is responsible for a host of evils, Aristotle and St. Thomas answer that such evils exist, not because possessions are not common, but because of the malice of men.[44] Indeed, it is the malice of men after the Fall, says St. Thomas and the Fathers, that makes private property so necessary: it is a legal check on greed and avarice.

Therefore, the Angelic Doctor assigns to man "the power of procuring and dispensing" external things. This is the first thing that belongs to human nature in regard to external things, "and in this regard it is lawful for a man to possess property."[45]

The Community of Private Property

St. Thomas next indicates the communal aspect of private property:[46]

> The second thing that belongs to man with regard to external things is their use. And in this respect man ought to possess external things, not as his own but in common, so that to wit, he is ready to communicate them to others in their need.

Thus St. Thomas distinguishes between the power of procuring and dispensing exterior things, and the power of using them; this was the general view of the Middle Ages. In placing the use of goods in common, Thomas is not only following the tradition of the Fathers, or more particularly, the essence of the Christian teaching on private property, but also Aristotle who said, "It is clearly better that property should be private, but the use of it common."[47]

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[43] ". . . si omnes cives haberent communes omnes possessiones, plurima litigia inter eos existerent." (*In Pol.*, II, lect. 4.)

[44] *In II Pol.*, lect. 4.

[45] "Respondeo dicendum quod circa rem exteriorem duo competent homini. Quorum unum est potestas procurandi et dispensandi. Et quantum ad hoc licitum est quod homo propria possideat." (*Summa theol.*, II-II, q. 66, a. 2.)

[46] "Aliud vero quod competit homini circa res exteriores est usus ipsarum. Et quantum ad hoc debet homo habere res exteriores non ut proprias, sed ut communes: ut sc. de facili aliquis ea communicet in necessitates aliorum." (*Summa theol.*, II-II, q. 66, a. 2.)

[47] Aristotle, *The Basic Works of Aristotle*, Oxford translation (ed. Richard McKeon, New York: Random House, 1941), *Politics* II, c. 5, 1263a38.

We can clearly see the logic in this if we reflect on Aristotle's definition of possessions in the sense of "true wealth"—those goods which fulfill man's existential needs.[48] The very reason for private property is that man will have on hand the things he needs in order to live a decent human life, both in the family and in the community.[49] It is obvious then that the primary end assigned to temporal goods by God is to serve the needs of *all* men, not merely those men who can get their hands on them. The natural right of all men to possess and use the goods of this earth for their bodily needs is a right which is primary and prior to the secondary right of private property and the division of goods. The right of private property then is relative and posterior: it is limited by the more natural right of the indigent to the necessities of life.[50]

Therefore, according to St. Thomas, private property is also ordered to the common good and thus must be conditioned by the common good. Property, then, has a social function, besides its primary individual-family function, which is, to serve the common utility, especially the needs of the poor. Every property owner after he has satisfied his own needs according to his state in life,[51] has a duty to give to others in need goods from his own superabundance:[52]

> The temporal goods which God grants us, are ours as to the ownership, but as to the use of them they belong not to us alone but also to such others as we are able to succour out of what we have over and above our needs.

Hence, the right of the poor to their sustenance is a right outweighing all other rights of property. Therefore, St. Thomas logically concludes that in the face of urgent need, when others have not freely given, out of a spirit of liberality, from their possessions to the needy, the person in extreme necessity may justly take from the goods of another what he immediately needs, and this is not, strictly speaking, theft.[53]

The best type of natural society then, according to Aristotle and St. Thomas, is the city in which possessions are privately owned but regulated by good customs and just laws, so that the citizens could freely communicate their goods among themselves. In such a community there would result the advantages of both systems, i.e., the system in which goods are privately owned, and the system in which they are commonly owned.[54]

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[48] "Et dicit quod verae divitiae sunt ex hujusmodi rebus quibus subvenitur necessitati naturae. Ideo autem istae sunt verae divitiae quia possunt tollere indigentiam et facere sufficientiam habenti eas, ut sc. homo sit sibi sufficiens ad bene vivendum." (*In I Pol.*, lect. 6.)

[49] ". . . oportet ad actum politici et oeconomici, ut acquirantur illa res quae thesaurizantur ad necessitatem vitae et utilitatem communitatis, tam domus quam civitatis; quia neque domus neque civitas potest gubernari sine necessariis vitae." (*In I Pol.*, lect. 6.)

[50] Urdanoz, *op. cit.*, p. 478.

[51] ". . . secundum conditionem et statum propriae personae et aliarum personarum quarum cura ei incumbit . . ." (*Summa theol.*, II-II, q. 32, a. 6.)

[52] *Summa theol.*, II-II, q. 32, a. 5. Quoted by Frank Grace, *op. cit.*, p. 24.

[53] *Summa theol.*, II-II, q. 66, a. 7.

The "Naturalness" of Private Property

The final question to be considered is, does the right to private property have the force of natural law or only the force of human law? Concerning this question many historians see a break between St. Thomas and the patristic tradition.[55] We will try to prove that there actually exists a perfect harmony between St. Thomas and the Fathers—they differ only in their mode of expression.

As we stated above, the opinion of the Fathers was that private property is a necessary consequence of original sin; therefore, it does not flow from the natural law but rather is a positive determination of human law. This is also true of the foundation of civil society which would have been unnecessary in the state of innocence.[56] Carlyle's designation of this patristic theory of private property as "conventional," however, is not correct, since this implies that it was founded merely on human custom. Although the Fathers held that private property does not flow from the very nature of man, yet they believed it to be an institution rendered necessary by the fall of man: it flows from man's nature as it is *hic et nunc*, in a state of original sin.[57] Even Carlyle admits that the Fathers thought private property to be a divine remedy for sin;[58] it is therefore more than conventional.

St. Thomas follows Aristotle in his conception of the State and therefore does differ from the Fathers on this point. Aristotle had said that "the state is a creation of nature, and that man is by nature a political animal."[59] This is because man can fulfill all his needs and attain all his natural ends only as a member of society; even in the state of innocence this would be true.[60] But, although private property would still be lawful in the state of pure nature, since it is in conformity with the rational nature of man; nevertheless, St. Thomas seems to hold that there would be no necessity for such an institution in the state of innocence:[61]

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[54] "Sed si possessiones sunt propriae, et ordinentur per rectas leges et consuetudines quod cives sibi invicem communicent de suis bonis, habebit talis modus vivendi bonum, quod est ex utroque: sc. et ex communitate possessionum et distinctione earum." (*In II Pol.*, lect. 4.)

[55] Carlyle, *op. cit*, V, 17; Grace, *op. cit.*, p. 22.

[56] Carlyle, *op. cit.*, V, p. 5-6; I, pp. 144-46.

[57] O'Brien, *op. cit.*, p. 55.

[58] Carlyle, *op. cit.*, V, 10.

[59] Aristotle, *op. cit.*, I, c. 2, 1253a1.

[60] ". . . homo naturaliter est animal sociale: unde homines in statu innocentiae socialiter vixissent." (*Summa theol.*, I, q. 96, a. 4.)

> In our present state a division of possessions is necessary on account of the multiplicity of masters, inasmuch as community of possessions is a source of strife, as the Philosopher says. In the state of innocence, however, the will of men would have been so ordered that without any danger of strife they would have used in common according to each one's needs, those of which they were masters—a state of things to be observed even now among many good men.

St. Thomas, then, agrees with the Fathers in holding that private property is not a primary precept of the natural law, because "*secundum jus naturale omnia sunt communia.*"[62] Nature is rather indifferent as to whether goods be held in common or in private, as long as her demand is met that all men get enough for their needs. Yet it is precisely in view of that demand, as it must be met here and now, that private property is rendered necessary. If we consider nature, not in the abstract, but in the concrete, by considering man *hic et nunc* in a state of sinful nature, private property becomes a practical exigency. Taking a universal fact of experience (i.e., man's greed) and considering the demands of the natural law, human reason has concluded to the necessity of private property. Therefore, says St. Thomas,[63]

> . . . there is no distinction of property on grounds of natural law, but rather according to human agreement, which pertains to positive law, as was said above (q. 57 a. 2.3). Hence private property is not opposed to the natural law, but is an addition to it, devised by human reason.

Since private property is a universal and necessary conclusion derived from the natural law as from its premise, and therefore having some force of the natural law, St. Thomas assigns it to the *jus gentium.*[64] *Jus gentium* is a part of positive law (*jus positivum*) since it is a positive conclusion of human reason, but it is distinguished from human law in the strict sense (*jus civile*) which is a particular determination of the natural law and the law of nations or *jus gentium.*[65] Yet private property also belongs to the *jus civile* in the sense that actual titles to property are determined and regulated and enforced by civil law. We can say, therefore, that the *fundamentum* of property rights is natural, but the *titulus* of particular property rights is according to human law.[66]

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[61] *Summa theol.,* I, q. 98, a. 1 ad 3. Quoted by Grace, *op. cit.,* p. 23.

[62] *Summa theol.,* II-II, q. 66, a. 2 ad 1.

[63] ". . . secundum jus naturale non est distinctio possessionum, sed magis secundum humanum condictum, quod pertinet ad jus positivum, ut supra dictum est (q. 57 a. 2.3). Unde proprietas possessionum non est contra jus naturale; sed juri naturali superadditur per adinventionem rationis humanae. (*Summa Theol.,* II-II, q. 66, a. 2 ad 1).

[64] *Summa theol.,* II-II, q. 57, a. 3, where St. Thomas distinguishes *jus gentium* from *jus naturale* and uses private property as an example of the former. *Cf.* also I-II, q. 95, a. 2 and a. 4, where the *jus gentium* is treated more specifically.

[65] *Summa theol.,* I-II, q. 95, a. 4.

To sum up then, the possession of private property is licit (i.e. not forbidden) by the natural law itself; but the necessity of private property is commanded by the *jus gentium.* We come to this conclusion by considering man in his present state, in the same way that human reason, seeing the concupiscence of men, concludes that it is necessary that men wear clothes although nature itself does not command it.[67] Therefore, St. Thomas' teaching on property is not at all out of harmony with that of the Fathers of the Church, but rather, as Father O'Brien says, "summarizes and consolidates it."[68] The patristic view that the institution of private property is founded upon man's sinful nature is simply made more precise by a further juridical distinction which St. Thomas borrowed from the Roman jurisconsults through the medium of St. Isidore.[69] With the notion of *jus gentium* St. Thomas could state with greater precision St. Augustine's distinction between natural and positive law.[70]

CONCLUSION

This then is what we can gather from the writings of St. Thomas concerning his teaching on property. He establishes on solid ground the natural basis and right of private property; yet it is cast in the light of social justice, Christian charity and the common good. His position was followed by all orthodox Christian theologians for two centuries after his death, but it finally gave way, in the face of the enormous commercial expansion and the ideological revolution of the 15th and 16th centuries, to a new spirit of capitalism and individualism. In modern times it has been attacked from the other extreme by the socialists and communists who deny the natural right of private property. Nevertheless, St. Thomas' concept of property has always been the core of the Church's teaching on the subject and the basis of much significant Protestant thought.[71] It is certainly to be hoped that the revaluation of our economic life and its standards which is taking place today, and the modern attempt "to reinstate the social ethics of the Christian faith into economics,"[72] will bring about a return to the Thomistic concept of property with its rights and limits. Only then will the goods of this earth serve the function that was intended for them by their Creator: "that the whole community is made happy, both in regard to works of virtue and in regard to external goods."[73]

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[66] O'Brien, *op. cit.,* p. 64.

[67] Walter Farrell, O.P., *A Companion to the Summa* (New York: Sheed & Ward, 1940), vol. III, p. 205.

[68] O'Brien, *op. cit.,* p. 62.

[69] *Ibid.*

[70] *Ibid.,* p. 63.

[71] Grace, *op. cit.,* p. 22.

Clement Risley, O.P.

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[72] Tawney, *op. cit.*, p. 5; *Cf.* also Lewis, *op. cit.*, p. 107.

[73] ". . . legislator debet ad hoc attendere, quod faciat totam civitatem felicem, et quantum ad opera virtutis, et quantum ad exteriora bona. . . ." (*In II Pol.*, lect. 5.)

THE SCHOLASTIC NOTION OF IMPETUS

THE RANGE OF CONCEPTS INVOLVED in a philosophical discussion of projectile motion is, at least implicitly, quite extensive. Such a discussion draws upon the basic notions of nature, motion, violence, quality, causality, and others. The natural philosopher has the task of explaining not only *what* happens in the sensible world around us, but *why* it happens as it does.

This is quite different from the modern physicist's outlook on projectile motion. Motion presents no great problem for him. Physics, since the time of Newton, has abstracted from the difficult task of assigning and explaining the efficient and final causes of motion. Modern physics looks at motion as a homogeneous state which is capable of being understood only when it is studied in terms of quantity. Mass and velocity are the only aspects of motion which interest the physicist. It makes no difference whether the motion be of a man walking, a stone falling, or a bullet flying; for physics does not admit any distinction between the kinds of motion it investigates. Alfred North Whitehead well expressed this view when he wrote, "The greatest curse to the progress of modern science is a hasty classification based on trivialities. An example of what I mean is Aristotle's classification of motions into violent and natural."[1]

But such a classification is basic to the whole of Aristotelian natural philosophy. The objection that it is "hasty" and "based on trivialities" is serious enough that, before going on, it will be necessary to consider the concept of nature and to show that this distinction between natural and violent motion is, in fact, accurately based on sound observation and reasoning.

Aristotle, in Books II and VIII of the *Physics*, gives us a clear picture of nature. He points out that we see things in the world around us which happen with great regularity: natural phenomena such as the growth of trees, the changing of seasons, and the flow of the tides. The regularity with which these phenomena occur precludes the possibility of explaining them as the results of mere chance. Chance, which is only a cause *per accidens,* rules out the notions of regularity and final causality. Chance events are unpredictable. Nature, on the other hand, is a *per se* cause which acts typically and for a purpose, an end. We can further distinguish nature by contrasting it with art. Nature is spontaneous and *ab intrinseco,* while art is imposed by human intelligence on reality from without. Nevertheless, art, like nature, is purposeful. Just as nature intends that a tree grow up from imbedded roots, so art calls for a house to be constructed upon a sturdy foundation. Nature, then, necessarily implies three basic characteristics: internal spontaneity, regularity, and final causality.

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[1] A. N. Whitehead, *Essays in Science and Philosophy* (London: Rider, 1948), pp. 174-5.

Aristotle defines nature as "the principle or cause of movement and rest in those things to which it belongs primarily (*per se*) and not as a concomitant attribute (*per accidens*)."[2] The words "principle" and "cause" bring out the fact that nature is both a passive principle and an active principle of motion and rest in natural things. Nature as a passive principle is a natural potentiality which can be actualized by natural agents, and whose actualization is for the good of the whole thing. This is clearly exemplified in the growth of plants. As an active principle, nature connotes internal spontaneity: activity which is given from within and which is directed to the attainment of some goal or end.[3] The heliotropisms of plants arise from nature as an active principle.

Nature, for Aristotle, is not only the principle of motion but also of relative rest. Rest in this context means the attainment of the goal sought, the fulfillment of the natural appetite of a thing, its perseverance in the desired state. Thus a flower plant is in a state of relative rest when it has produced its characteristic blossom.

Having briefly examined the concept of nature, we can now proceed to distinguish natural from non-natural motions. Natural motion is from within, is spontaneous. Also, it is able to be known by the test of regularity, for it will act in the same way unless somehow impeded.[4]

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[2] Aristotle, *The Basic Works of Aristotle,* Oxford translation, ed. Richard McKeon (New York: Random House, 1941), *Physics,* II, c. 1, 192b21-23.

[3] By saying that nature acts for an end, we do not imply that natural things know or intend some end. It is not required that they know purpose as purpose. They need only follow their already-determined nature. For nature is a work of divine art.

[4] Cf. St. Thomas, *Summa contra gentiles,* III, c. 23, parag. 6, trans. Vernon Bourke (Garden City: Image Books, 1956).

Thirdly, and most important, natural motion is for a purpose, for some goal.[5] It is intrinsically teleological. We say that it is the very "nature" of hot air to rise, of water to flow downhill, of plants to bend toward the sun. These are truly natural motions. But there are also motions which do not spring from within the moving object itself: motions which, in fact, are against the natural inclination of the object. A stone certainly has no natural inclination for upward flight, but must be moved wholly from without, since such motion is directly opposed to the gravitational tendency of the stone. Motion of this kind is clearly non-natural or violent and is very different from the type of motion we have described as natural.

The next question we must consider is that of causality. We must be careful not to think of nature as an efficient cause. In living things, it is the soul which is the *causa efficiens* of motion, while nature serves as the spontaneous source of the characteristics of the living body. Thus the soul of a fish is the efficient cause of the activity of swimming; but it is nature which is the source of the typical characteristics which follow upon the substantial form of the body but which are not efficiently caused by it. Nature, then, is responsible for such things as the color and size of the fish, the fins by which it swims, and the gills by which it breathes.

Neither in non-living things can we say that nature is an efficient cause of natural motions. For if it were, inanimate things would be the cause of their own movements and the distinction between living and non-living things would have no meaning. It is proper to living things to move themselves.[6] What is the efficient cause of the motions and determinations of which nature is the source? St. Thomas clearly states that the natural phenomena spontaneously emanating from a body are efficiently caused by the agency which brought that body into existence. He points out that:

> In heavy and light bodies nature is a formal principle of movement, for just as other attributes follow upon substantial form, so too does place, and consequently motion toward place; not that the natural form is a mover, but the mover is the progenitor which produced such a form, upon which such motion follows.[7]

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[5] *Ibid.*

[6] Cf. Aristotle, *De anima,* II, c. 1, 412a14-15.

[7] "In corporibus vero gravibus et levibus [natura] est principium formale sui motus, quia sicut alia accidentia consequuntur formam substantialem, ita et locus, et per consequens moveri ad locum: non tamen ita quod forma naturalis sit motor, sed motor est generans, quod dat talem formam, ad quam talis motus consequitur." St. Thomas, *In Phys.* (Turin: Marietti, 1954), II, lect. 1, n. 4. For an illuminating discussion of this text, see J. A. Weisheipl, *Nature and Gravitation* (River Forest, Ill.: The Albertus Magnus Lyceum, 1955), p. 25, n. 78.

Again, in the *Summa contra gentiles,* St. Thomas notes that:

> For, although simple forms are not movers, they are nonetheless the principles of motion, since natural motions are resultant from them, as are all other natural properties . . . A form is the principle of local motion in the same way that a certain place is proper to a body by virtue of its form; it is moved to this place by the force of its form tending to it, and, since the generating agent gives the form, it is said to be the mover.[8]

Hence the agency responsible for the existence of a stone endows the stone with a determined nature, upon which natural motions follow. Consequently, when resisting impediments are removed and a stone falls downward, the efficient cause of that motion is the generator of the stone's nature. But the nature itself acts as an active formal principle of the motion.[9]

It is in the context of causality that the problem of projectile motion confronts the philosopher. When a stone or a baseball is thrown into the air, it is easy enough to see that the thrower is responsible for setting the projectile in motion. But the difficulty arises: what keeps it in motion after it has been separated from the thrower? Obviously the stone does not move itself, for *sui motio* is proper to living things. From experience we know that upward motion is not natural to a stone; so the motion cannot be explained by nature. Moreover, the hand which threw the stone cannot account for its continued motion, since the stone is now separated from its source of projection. Yet something must be responsible for the continued motion, since motion is not a state of *esse,* but of *fieri.*[10] If the continuation of non-natural or violent motion cannot be explained by life, nor nature, nor directly by the source of projection, then the philosopher must search elsewhere for an explanation.

With this understanding of the problem, let us now turn to the solutions offered by Plato, Aristotle, John Philoponus, and finally, the Scholastics.

PLATO

Plato set forth his physical theory in the *Timaeus.* Constructed upon mathematical principles, it is a theory which denies the possibility of scientific certitude in physics. Plato tells us that what we call "things" are really nothing more than copies of the eternal and unchanging ideas which exist apart from matter. The forms of these ideas are projected onto a universal screen, the Receptacle. This Receptacle is the matter in which and out of which everything is made; it is the qualitatively undifferentiated, stable space which hosts the fluxating particles of the elementary bodies. The only motion proper to bodies is that to their proper place in the Receptacle. The efficient cause of this motion is the *Anima Mundi*—the "World-Soul" which shakes the Receptacle much like a farmer shakes a wheatstrainer. All other motions are results of collision, or of mutual replacement. Projectile motion is of this latter type. To explain the flight of projectiles, Plato invokes the principle of the "circular thrust" (*antiperistasis*). He originally proposes this principle in order to give a mechanical explanation for the process of respiration and to disprove the existence of a void. He then applies the principle to projectile motion and other phenomena which were thought by some to have necessitated the void.

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[8] St. Thomas, *Summa contra gentiles,* III, c. 23, parag. 5.

[9] In this sense, nature can be said to be an instrumental efficient cause. For it is by nature that the generator efficiently causes those motions which follow upon the form of the body generated.

[10] Cf. Aristotle, *Physics,* III, c. 1.

Plato explains the "circular thrust" in the following passage:

> But let us once more consider the means whereby the effect of respiration has come to take place as it now does. It was in this way. Since there is no vacancy into which any moving body could make its way, and the air we breathe does not move out from us, the consequence is at once plain to anyone: it does not go into vacancy, but thrusts the neighboring air out of its place. What is so thrust keeps on displacing its neighbors successively, and in the course of this compulsion the air is all driven round and enters the place whence the breath came out, refilling it as it follows the breath.[11]

He goes on to say that we may look to this principle,

> . . . for the explanation of what happens in the cases of medical instruments for cupping, of the process of swallowing, and of projectiles, which keep moving after their discharge either through the air or along the ground.[12]

For Plato, then, the air that has been pushed forward by the projected stone, moves back behind the stone and, filling in the space which the stone has just left, pushes the stone on further. But this involves three distinct motions on the part of the air: it must be pushed forward by the stone, then move back, and finally turn and proceed forward once more.[13]

Aristotle rejects the Platonic theory arguing that if the thrower by hurling the projectile also moves the air, and the air being moved is also a mover, then, "all things would have to be in motion simultaneously and also to have ceased simultaneously."[14] In other words, all movement would cease when contact with the original mover was broken. Thus Plato's "circular thrust" is constructed on the faulty assumption that the mover imparts only motion and the motion propagates itself by means of reversing and impelling air, until the stone loses its force and falls to the ground. Aristotle did not present this theory as his own when he considered it in Book VIII of the *Physics,* but he did use it to introduce what he thought was the correct answer to the problem.

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[11] Plato, *Timaeus*, 79a-b, ed. Francis Cornford, *Plato's Cosmology*, (New York: Liberal Arts Press, 1957).

[12] *Ibid.*, 79e-80.

[13] Cf. John Philoponus, *Commentary on Aristotle's Physics*, (ed. Vitelli) 639.3-642.9. English translation in *Source Book in Greek Science* (New York: McGraw-Hill, 1948), pp. 221-3.

ARISTOTLE

Aristotle, as we have seen, objected to a mover giving only motion. But what if the thrower gives not only motion, but also imparts to the medium *the power of being a mover*? In Book VIII of the *Physics,* Aristotle concludes that:

> The original movent gives the power of being a movent either to air or to water, or to something else of the kind, naturally adapted for imparting and undergoing motion.[15]

By assigning the power of being a mover to the medium, Aristotle effectively solves his own objection to Plato's theory. All motion would not have to be simultaneous, nor would it cease when contact with the original mover was broken.

A closer look at the Philosopher's theory will reveal how it explains projectile flight. He distinguishes two functions of the medium: (1) it undergoes motion when the mover moves it; (2) even when part of the medium ceases to be in motion (when the mover is no longer moving it), it still has the power of being a mover and so can cause another part of the medium consecutive with it to be in motion and also to have the power of moving the next part. This process continues to move the projectile until one member of the series does not cause the next member to be a mover, but only causes it to be in motion. When the last member which has the power of moving ceases to move the last part, (the power of being a mover grows weaker as it is passed from one part of the medium to the next), the flight of the projectile gradually ceases and it naturally falls to the ground.

Earlier, in Book IV of the *Physics,* Aristotle had used the example of violent motion to argue against the Democritean void. His argument is that compulsory motion requires a medium by which and in which to move. However, in a void there is no medium. Therefore, there can be no compulsory motion in a void. But violent motion is an observable fact in the world around us. Hence there can be no void.[16] Here also, he explains how the air is able to move a projectile:

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[14] Aristotle, *Physics,* VIII, c. 10, 266b35-8.
[15] *Ibid.,* 267a3-5.

> . . . the air that has been moved pushes them [projectiles] with a movement quicker than the natural locomotion of the projectile wherewith it moves to its proper place.[17]

In Book III of the *De caelo,* Aristotle defends the medium as the cause of the continued motion of projectiles. He again points out that nature is the source of movement from within the thing itself, while force or violence is a source of movement which is wholly from without. If projectile motion is not from nature, which is an intrinsic source, then it must be from a source which is extrinsic to and outside the body moved. Now the medium is ideally suited for producing compulsory motion and can do so by its own natural motions.

> . . . for air is both light and heavy, and thus *qua* light produces upward motion, being propelled and set in motion by the force, and *qua* heavy produces a downward motion.[18]

Therefore, it is precisely because air by its very nature is light and moves upward, that it is able to move a stone in upward flight. "If the air were not endowed with this function, constrained movement would be impossible."[19]

Aristotle's theory embodies three important aspects. First, the thrower moves the air and also gives it the power of being a mover. Secondly, air is naturally suited for upward and downward movement and thus can move the projectile by its own natural motion. Thirdly, the medium moves faster than the motion of the projectile to its proper place, thus keeping the projectile in flight.

Aristotle's theory maintains the concept of nature as an intrinsic spontaneous source of activities which are directed to a determined goal. The Philosopher defines violent motion as "that whose moving principle is outside, the thing compelled contributing nothing."[20] Thus he appeals to an external cause to explain projectile motion, since this motion is not from within, but is extrinsic to the nature of the thing projected. Moreover, the final cause of projectile motion is that intended by the thrower, not that intended by nature itself.

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[16] Aristotle is not saying that the existence of a vacuum is impossible. He is arguing that a void in the Democritean sense is untenable.

[17] Aristotle, *Physics,* IV, c. 8, 215a15-18.

[18] Aristotle, *De caelo,* III, c. 2, 301b24-26.

[19] *Ibid.,* 28-30.

[20] Aristotle, *Eth. Nic.,* III, c. 1, 1110b15.

John Philoponus[21] rejects Aristotle's solution to the problem of forced motion. Contending that the medium is not the cause of projectile flight, he asks:

> When one projects a stone by force, is it by pushing the air behind the stone that one compels the latter to move in a direction contrary to its natural direction? Or does the thrower impart a motive force to the stone, too? Now if he does not impart any such force to the stone, but moves the stone merely by pushing the air, and if the bowstring moves the arrow in the same way, of what advantage is it for the stone to be in contact with the hand, or the bowstring to be in contact with the notched end of the arrow?
>
> For it would be possible, without such contact, to place the arrow at the top of a stick, as it were on a thin line, [to reduce friction to a minimum] and to place the stone in a similar way, and then, with countless machines, to set a large quantity of air in motion behind these bodies. Now it is evident that the greater the amount of air moved and the greater the force with which it is moved, the more should this air push the arrow or stone and the further it should hurl them. But the fact is that even if you . . . set in motion all the air behind the projectile with all possible force, the projectile will not be moved the distance of a single cubit.
>
> If, then, the air, though moved with a greater force, [i.e. a greater force than employed by one who hurls a projectile] could not impart motion to the projectile, it is evident that, in the case of the hurling of missiles or in the shooting of arrows, it is not the air set in motion by the hand or bowstring that produces the motion of the missile or arrow.[22]

Other strong points such as the divisibility of the air, the fact that air seems to hinder rather than help motion, and several other facts of experience could be brought to bear against the Aristotelian theory. It was observations such as these which led thinkers like Philoponus, and later, Marchia and Buridan, to seek some other solution. It must be remembered, however, that the principles on which Aristotle had built his theory were valid, and, in fact, were the foundation for the development of the notion of impetus.

JOHN PHILOPONUS

It is generally agreed among scholars that John Philoponus was the first to show that projectile motion is not continued by the action of the medium. We have seen his reasons for rejecting Aristotle's position.

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[21] John Philoponus was a Christian scholar of Alexandria in the 6th century. He composed commentaries on eleven works of Aristotle.

[22] John Philoponus, *op. cit.*, pp. 222-3.

To what, then, if not the medium, are we to attribute the continuation of violent motion? Philoponus gives us his answer:

> From these considerations and many others, we may see how impossible it is for forced motion to be caused in the way indicated [i.e. by the medium]. Rather it is necessary to assume that some incorporeal motive force is imparted by the projector to the projectile, and that the air set in motion contributes nothing at all or else very little to the motion of the projectile. If, then, forced motion is produced as I have suggested, it is quite evident that if one imparts motion "contrary to nature" or forced motion to an arrow or a stone the same degree of motion will be produced much more readily in a void than in a plenum. And there will be no need of any agency external to the projector . . .[23]

Thus Philoponus, like Aristotle, holds that some kind of motive power is responsible for projectile flight. However, his motive power is not imparted to the medium, but to the projectile itself. Consequently, he can argue that Aristotle's dismissal of the void on the basis of projectile motion is not valid. If the medium is not needed for forced flight (and, in fact, is a hindrance to the same), motion of this type would be less impeded and easier to produce in a void than in a plenum.[24]

Philoponus set forth an original idea: a certain incorporeal motive force responsible for violent motion. But this motive power was only temporary and borrowed, and was decreased by the natural tendencies of the body as well as the resistance of the medium through which it traveled, so that non-natural motion terminated when the force was exhausted.

While assigning the motive power to the projectile itself was a new concept, Philoponus' discovery was in complete accord with the principles which Aristotle himself had employed centuries before. But the very fact that Philoponus uses such terms as "forced motion," and motion "contrary to nature," we see that he is aware of the distinction between natural and non-natural motion. His "incorporeal motive force" agrees with Aristotle's *vis movendi* of the medium in that they are both extrinsic to the nature of the thing projected. The motion is not from within, but from the projector: is not spontaneous, but forced upon the missile from without. Since compulsory motion is not *ex natura*, Philoponus would also agree with Aristotle that it does not share the finality which is characteristic of natural motion, but derives its finality solely from the thrower or initial agent.

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[23] *Ibid.*, p. 223.

[24] Philoponus is not here arguing for the existence of a void, nor for inertial motion. He is merely pointing out that Aristotle did not really disprove the possible existence of the void by basing his argument on the necessity of a medium for projectile motion.

Philoponus' theory semes to have influenced Islamic authors such as Avicenna and, possibly, Alpetragius.[25] But the lack of Latin translations containing the Philoponus-Islamic views, renders very doubtful any suggestion that these views had an influence upon the development of the Scholastic theory of impetus.[26] In fact, the Aristotelian theory continued to be prominent even in the thirteenth century. St. Thomas Aquinas, commenting on the *De caelo* of Aristotle, notes that violent motion cannot arise from an intrinsic force; consequently, it must be by a force impressed upon the medium that the projectile continues to move.[27]

THE SCHOLASTICS

In the fourteenth century, a Franciscan, Franciscus de Marchia, became apparently the first of the Scholastics to propose a theory of impetus. Marchia maintains that the thrower leaves a force behind in the projectile by which its motion is continued. There are two main reasons why this force left behind (*virtus derelicta*) "resides in the body which is moved rather than in the medium."[28] First, he points out that:

> It would be in vain that something should be done by many [causes] which can be done by few . . . now it does not seem necessary to posit something other than the moving body or the force received in it and the original motor as the effective cause [s] of motion; therefore, the medium is not [the cause.][29]

Secondly, such a theory more easily "saves the appearances," that is, better accounts for the phenomena of violent motion.[30]

Marchia's residual force is not a permanent quality, but lasts only for a time. This force is always alien to the nature of the body; it is a kind of extrinsic form, which the nature of the missile strives to overcome.

John Buridan, the leading philosopher at the University of Paris during the second quarter of the fourteenth century, reaches essentially the same conclusions as Marchia, though probably without the influence of Marchia's teachings.

After rejecting Aritsotle's impressed medium, Buridan, commenting on the *Physics* of Aristotle, offers his own solution to the problem:

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[25] Cf. Marshall Clagett, *The Science of Mechanics in the Middle Ages* (Madison: U. of Wisconsin Press, 1959), pp. 510-15.

[26] *Ibid.*, 514-15.

[27] Cf. St. Thomas, *In De caelo*, III, lect. 7, n. 6.

[28] Franciscus de Marchia, *On the Sentences of Peter Lombard*, a *reportatio* of the Fourth Book trans. by Marshall Clagett, *op. cit.*, pp. 526-30.

[29] *Ibid.*, p. 529.

[30] *Ibid.*

> Thus we can and ought to say that in the stone or other projectile there is impressed something which is the motive force (*virtus motiva*) of that projectile. And this is evidently better than falling back on the statement that the air continues to move that projectile. For the air seems rather to resist. Therefore . . . the motor in moving a moving body impresses (*imprimit*) in it a certain impetus or a certain motive force of the moving body, [which impetus acts] in the direction toward which the mover was moving the moving body, either up or down, or laterally, or circularly.[31]

But, Buridan goes on to say that this impetus,

> . . . is continually decreased by the resisting air and by the gravity of the stone, which inclines it in a direction contrary to that in which the impetus was naturally predisposed to move it. Thus the movement of the stone continually becomes slower, and finally that impetus is so diminished or corrupted that the gravity of the stone wins out over it and moves the stone down to its natural place.[32]

This theory, further elaborated by Buridan's principal successors at Paris, Albert of Saxony and Marsilius of Inghen, became the common Scholastic teaching. Thus, for the Scholastics, impetus is conceived as a quality educed from the matter, but which is extrinsic to the nature of a body. It is an accidental force which is weakened and destroyed by contrary forces. Impetus is a kind of "second nature." For just as nature is the intrinsic formal principle but not the efficient cause of natural motion, impetus is an extrinsic principle but not the efficient mover in compulsory motion. And as nature is the instrument of the generator, impetus is the instrument by which the projector is responsible for continued violent motion.

It is interesting to note that some later Scholastics, seeing that the impetus theory was so much in accord with Aristotle's own principles of compulsory motion, attempted to "save" Aristotle and St. Thomas by drawing from their writings statements which seemed to imply the correct theory of projectile motion. Indeed, as we have seen, the impetus theory was constructed upon Aristotelian principles. In it we find embodied the view of nature as an intrinsic, spontaneous source of determined activity, the concept of violent motion as arising wholly from an extrinsic principle, and the important acknowledgment of the intrinsic finality of nature, as opposed to a finality imposed by an external agent. It was these concepts which formed the basic foundation for the Scholastic notion of impetus.

Jerome Langford, O.P.

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[31] John Buridan, *Questions on the Eight Books of the Physics of Aristotle,* in Clagett, *op. cit.,* p. 534.

[32] *Ibid.,* p. 535.

ST. THOMAS ON THE NATURE OF THE CONTINUUM

The problem of the construction of the continuum is one of those philosophical difficulties which, at first glance, does not seem to admit of a solution. Down through the ages philosophers have argued the point. Plato unreservedly held for parts having actual existence in the continuum. John of St. Thomas, Goudin, and Gredt follow this same tradition. The Jesuit philosopher, Suarez, held that even though the parts are not actually divided, they are actually distinct. Aristotle and St. Thomas held that the parts of a continuum are only in potency because there are no actual limits which serve to divide the parts. These, then, are the solutions given by past philosophers. In recent times, however, there seems to have arisen a confusion of teachings. Many hold that the position of John of St. Thomas and Gredt is really identical with that of Aristotle and St. Thomas. It will be the task of this paper to show that their teachings are not one. Having done this we will consider the possibility of reconciling the two views.

In order to proceed in a logical manner and to avoid confusion it is important that we first clarify and limit the problem precisely. Most of the recent writers on the subject have stated the problem of the continuum by asking whether the parts of the continuum are distinct in act or in potency only. Stating the problem in this manner, however, confuses the issue and makes the solution more difficult, because in no other philosophical consideration dealing with distinction do we find the terms "distinct in act and distinct in potency." St. Thomas never uses this terminology.[1] In considering questions of distinction he uses the terms "really distinct" or "distinct by reason only." In speaking of the continuum he merely asks whether the parts are in act or in potency.

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[1] cf. P. Hoenen, "De Continuitate Crystallorum," *Gregorianum*, VI, (1925), 254.

For this reason our consideration here can be stated as follows: are the parts of the continuum beings in act or beings in potency and are they really distinct or distinct by reason only?

It is important for us to realize also that quantity, to which continuity pertains, cannot be defined properly. This is because quantity is a supreme genus and, therefore, does not admit of a strict definition which must be formulated through a genus and specific difference. The best that can be obtained is a description of quantity *a posteriori.* We shall see the descriptions given by John of St. Thomas, Gredt, and St. Thomas when we treat their theories in particular.

MODERN INTERPRETATIONS

Gredt, following John of St. Thomas, "defines" quantity as "the order of parts in the whole," and also as "an accident attributing to the subject parts outside of parts *quoad se.*"[2] Continuous quantity for them seems to be a plurality of parts of the same nature which are joined together, thus giving rise to extension. Accepting this definition of quantity they begin their discussion of the continuum. In dealing with the construction of the continuum there are two main fields of inquiry, the indivisibles and the parts.

In regard to the indivisibles they firmly assert that no continuum is composed solely of indivisibles. This fact is easily seen for if continua were composed only of indivisibles, then extension would be impossible. In proof of this thesis they rightly refer to St. Thomas.

St. Thomas shows that no continuum can be composed solely of indivisibles either by way of contact or by way of continuation, because in an indivisible there cannot be one thing which is an extremity and another which is not. Thus if indivisibles touched at all they would be joined *in totum* and there would not be extension.[3]

Having shown this, they proceed to prove that there are actual indivisibles both at the terms of the continuum and in the continuum itself. They further hold that the indivisibles in the continuum serve to join the actual parts of the whole continuum. Gredt makes his view clear when he says that according to the essence of every continuum there are parts in act, abstracting from those parts made by some designation or division.[4] Thus for Gredt and John of St. Thomas all continuous quantity is made up of parts, i.e., parts really distinct among themselves, not however discrete, but continuous one to the other and joined by indivisibles.[5]

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[2] ". . . quantitas praedicamentalis definitur: ordo partium in toto. Quantitas etiam definiri possit: accidens tribuens subjecto habere partes extra partes quoad se." (J. Gredt, *Elementa Philosophiae,* [Herder: Barcelona, Spain, 1946], p. 146).

[3] St. Thomas, *In Phys.,* (Marietti: Turin, 1954), VI, lect. 1, n. 4; cf. also, Aristotle, *The Basic Works of Aristotle,* Oxford translation, (ed. Richard McKeon, Random House: New York, 1941), *Physics,* VI, c. 1, 231a21-29.

John of St. Thomas proves that the indivisibles at the terms are in act because if they were not the continuum would not be determined according to quantity and, therefore, it would be actually infinite; but this is impossible. Thus the indivisibles at the terms of the continuum must be in act. In regard to the indivisibles in the continuum itself he says:

> If the indivisibles at the terms are in act, then also those in the continuum itself for they differ only in function and office. The continuative indivisibles are the end of one part and the beginning of the other; the terminative indivisibles, however, are only the end or only the beginning of the continuum.[6]

His reason for saying this is as follows:

> The continuum and the contiguum are present in the thing in act and physically. But the continuum is that whose parts are joined at one common term, i.e., by the indivisible; the contiguous, however, is that whose extremities, i.e., whose indivisibles, are together, so that two indivisibles touch each other. Therefore, as there is present an actual joining of parts of the continuum and an actual contact of the continuous, so also there are present actual indivisibles.[7]

Gredt, on the other hand, uses this argument:

> That is in act in the continuum by which contact and conjunction of parts in act is accomplished. However, contact of one quantity to another is accomplished by the indivisible extremities. Therefore, the indivisibles in the continuum are in act.[8]

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[4] Gredt, *op. cit.,* I, p. 263.

[5] *Ibid.*

[6] "Nihilominus resolutio est dari actu in continuo indivisibilia, tam terminativa quam continuativa, haec enim solum differunt penes munus et officium. Continuativa enim sunt finis unius partis et principium alterius, terminativa autem solum sunt finis vel solum principium." (John of St. Thomas, *Cursus Philosophiae,* [Marietti: Turin, 1820], p. II, q. 20, a. 1).

[7] ". . . continuum et contiguum datur in re, actu et physice. Sed continuum est, cuius partes unico termino seu indivisibili copulantur, contigua autem, quarum extrema seu indivisibilia sunt simul, ita quod duo indivisibilia se tangunt. Ergo sicut datur actualis copulatio partium continui et actualis contactus continui, ita etiam dantur actualiter indivisibilia." *(Ibid.)*
It would seem that John of St. Thomas is basing his proofs on those of St. Thomas for he quotes the opusculum *De instantibus.* It is generally agreed, however, that this work is not to be attributed to St. Thomas, but rather to one of his disciples.

[8] "Illud actu datur in continuo secundum quod actu contactus et coniunctio partium. Atqui, contactus unius quantitatis ad aliam est penes extremitates indivisibiles; similiter coniunctio partium eiusdem quantitatis est secundum extremitates seu indivisibilia. Ergo indivisibilia sunt in actu in continuum." (Gredt, *op. cit.,* I, p. 265-266).

As further proof that these indivisibles are in act they say that the indivisibles, as positive realities, are really distinct from the parts by a real modal distinction. They explain this by saying that the indivisibles are really distinct from the parts, since the formal effect of the indivisibles is really distinct from the parts. This formal effect is contact and conjunction of the parts by which penetration of the parts is rendered impossible. This effect, however, is really distinct from the parts and, therefore, the indivisibles are positive realities in act and really distinct from the parts.

Thus far we have seen the proofs given by John of St. Thomas and Gredt for the actuality of indivisibles at the terms of the continuum and also for the actuality of the indivisibles in the continuum itself. We must now consider their proofs for the actuality of the parts of the continuum. Although John of St. Thomas deals at length with this consideration, his view can be understood in the terms of the argument given by Father Gredt. Having accepted quantity as being the order of parts one after the other, and since a real and actual ordering demands a real distinction between those things which are ordered, then it must be admitted that the parts of the continuum, which are ordered by quantity, are really distinct. However, a real distinction demands actuality of the parts; therefore, Father Gredt concludes, the parts of the continuum are in act.[9]

This, then, is how the continuum is composed according to the view of John of St. Thomas and Father Gredt. The continuum is made up of parts in act, joined by indivisibles in act, and the whole continuum is limited, i.e., determined by indivisibles in act at its terms. According to this theory it follows that an extended body of three dimensions flows from minute partial bodies which are joined by surfaces; surfaces flow from partial surfaces which are joined by lines; lines flow from partial lines which are joined by points.[10]

Finally it remains for us to consider the fourfold division of part as given by Gredt. He divides "part" into "aliquot," proportional, minimal, and integral. "Aliquot" parts are those, all of which taken together add up to the whole. Proportional parts do not differ entitatively from the "aliquot" parts, but their divisibility is explained according to different proportions and comparisons. Thus if we divide a six inch line into six lines of one inch, we then have aliquot parts. If we divide the line in half and then into half again etc., we then have proportional parts. It is easily seen that a continuum can be divided *ad infinitum* into proportional parts, but not into "aliquot" parts.

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[9] *Ibid.*, p. 263.
[10] *Ibid.*, p. 266.

A minimal part is the smallest division that can be made without reaching the indivisible. These parts are not extended in act but in potency only. Minimal parts are held, however, to be extended relative to one another for they are able to be united and ordered outside other parts according to the quantitative order of prior and posterior, but they are not extended absolutely *secundum se* in act.[11] From what has been said these parts seem to be the same as indivisibles. However, the minimal part has indistinct parts in potency while the indivisible has no parts whatsoever. Secondly, a minimal part joined to another part constitutes an extended body, but indivisibles do not.

An integral part is that part that has the same *ratio*, i.e., the same substantial form as the whole.

Which of these parts are in act according to John of St. Thomas and Gredt? It is immediately seen that the "aliquot" or designated part cannot be in act because it is impossible to keep subtracting a definite quantity *ad infinitum* from any continuum. The definition of the continuum, however, is that which is infinitely divisible. Gredt holds that it is the minimal part that is in act while John of St. Thomas, having divided "part" only into "aliquot" and proportional, holds that the proportional part is in act.

In order to simplify matters we can summarize their doctrine by saying that the continuum contains a limited, i.e., a finite number of parts in act—these parts being the minimal or proportional parts. These actual parts are joined by indivisibles in act, and, finally, the entire continuum is limited by actual indivisibles at its terms. This theory does not destroy the infinite divisibility of the continuum because they hold that in addition to these actual parts there is an infinite number of parts in potency.

THE POSITION OF ST. THOMAS

There are many who believe that St. Thomas himself held for the theory of actual parts. This belief, it would seem, lacks sufficient foundation. The best way to show the position of St. Thomas is to let St. Thomas speak for himself. For this reason we will present several pertinent texts in which it can be clearly seen that St. Thomas' doctrine is strictly confined to potential parts only.

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[11] *Ibid.*

In speaking of act St. Thomas says:

> For we say that the image of Mercury is in the wood in potency, and not in act before the wood is carved; but if it becomes carved, then the image of Mercury is said to be in the wood in act. And similarly in any continuous whole, its parts. A part, for example a half, is in potency, insofar as it is possible that that part be taken away from the whole through the division of the whole, but the whole having been divided, that part will now be in act.[12]

Continuing in this same line of thought he says:

> We say that the image of Mercury is in the stone in potency, and that the middle of the line is in potency; for each part of the continuum is potentially in the whole.[13]

In book three of the *Metaphysics* St. Thomas states that the indivisibles at the terms of the continuum are in act, but he says that the indivisibles in the continuum itself are not in act. He says:

> The line and the point are not in act in the continuum except only in regard to those which terminate the continuum.[14]

In discussing the various modes in which sensible substance may be composed from parts he says:

> There are many parts of these substances, because, since any whole is composed from parts, it is necessary that there be many composing parts rather than a composed whole. And that these parts are in potency only is obvious because none of them is numerically distinct; in fact all parts insofar as they are parts are united in the whole. For everything that is in act must be distinct from others because one thing is divided from another through its act and through its form. When, however, those which are placed as parts shall become separated from one another by the dissolution of the whole, then indeed they are beings in act, not as parts, but as matter existing under the privation of the form of the whole. As is obvious concerning earth, fire, and air, which, when they are parts of a mixed body, are not

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[12] "Dicimus enim in ligno esse imaginem Mercurii potentia, et non actu, antequam lignum sculpatur; sed si sculptum fit, tunc dicitur esse in actu imago Mercurii in ligno. Et similiter in aliquo toto continui pars eius. Pars enim, puta medietas, est in potentia, inquantum possibile est ut pars illa auferatur a toto per divisionem totius; sed diviso toto, iam erit pars illa in actu." (St. Thomas, *In Metaph.*, [ed. R. Cathala, Marietti: Turin, 1925], IX, lect. 5, n. 1825).

[13] "Imaginem Mercurii dicimus esse in lapide in potentia, et medium lineae dicitur esse in linea in potentia. Quaelibet enim pars continui est potentialiter in toto." (*Ibid.*, V, lect. 9, n. 897).

[14] "Linea et puncta non sunt actu in continuo nisi solum quantum ad illa quae terminant continuum." *(Ibid.*, III, lect. 13, n. 509).

> existing in act, but in potency in the mixture; when they are separated, then they are existing in act, and not as parts.[15]

Speaking again of the composition of the whole he says:

> However, the parts from which the whole is constituted are able to be in the whole in two ways. In one way in potency, in another way in act. Indeed, the parts of the whole continuum are in potency; they are in act in a non-continuous whole, as the stones are in act in a pile of stones. A continuum is more an *unum* and, consequently, more a *totum* than that which is not a continuum; and if not in potency, at least "*energia*," i.e., in act. For *energia* is called interior action.[16]

Turning our attention now to the *Commentary on the Physics* we see that when St. Thomas is speaking of the indivisibles as the term and division of the continuum he says:

> But as the point within a line is in potency before the division of the line, in act, however, when the line has been divided, since the point is the division of the line: similarly that which I call *mutatum esse* within motion is in potency when motion is not terminated there, but if it is terminated there it will be in act.[17]

Discussing the motion of the parts in a continuum St. Thomas says:

> Thus we conclude that it is not necessary that if any part of whatever size existing in the whole move, that it is able to move *per se* existing separately: because the part in the whole is not in act but in potency, especially in continua. For thus something is being and also one. One however, is that which is undivided in itself and divided from others; a part, insofar as it is in the whole is not divided in act, but in potency only; whence it is not a being in act nor one,

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[15] "Dicit autem partes esse plurimas harum substantiarum, quia, cum unumquodque totum ex pluribus componatur, oportet plures esse partes componentes quam tota composita. Et quod partes sint in potentia tantum, patet, quia nihil de numero earum est separatum; immo omnes partes inquantum sunt partes, sunt unitae in toto.

Omne enim quod est in actu, oportet esse ab aliis distinctum quia res una dividitur ab alia per suum actum et per formam, sicut supra dictum est. Quando autem ea, quae ponuntur partes, fuerint separata ab invicem dissoluto toto, tunc quidem sunt entia in actu, non quidem ut partes, sed ut materia existens sub privatione formae totius. Sicut patet de terra et igne et aere, quae quando sunt partes corporis mixti, non sunt actu existentia, sed potentia in mixto; cum vero separantur, tunc sunt in actu existentia, et non partes." (*Ibid.*, VII, lect. 16, n. 1632-1633).

[16] "Partes autem ex quibus constituitur totum dupliciter possunt esse in toto. Uno modo in potentia, alio modo in actu. Partes quidem sunt in potentia in toto continuo; actu vero in toto non-continuo; sicut lapides actu vero in acervo. Magis autem est unum, et per se consequens magis totum, continuum, quam non-continuum. Et ideo dicit quod oportet partes inesse toti, maxime quidem in potentia sicut in toto continuo. Et si non in potentia, saltem 'energia' idest in actu. Dicitur enim 'energia,' interior actio." (*Ibid.*, V, lect. 21, n. 1102).

[17] "Sed sicut punctum infra lineam est in potentia ante lineae divisionem, in actu autem quando iam linea est divisa, cum punctum sit ipsa lineae divisio: similiter hoc quod dico mutatum esse infra motum est in potentia quando motus non ibi terminatur, sed si ibi terminatur erit in actu." (*In Phys.*, VI, lect. 8, n. 4).

> but in potency only. And because of this the part does not act, but the whole.[18]

What he is saying in the above passage is that the part existing in the whole moves only *per accidens,* since that part is only in potency.

Perhaps the most interesting and thought-provoking text is the one that follows. Contained in this one passage is an idea of minimal parts, the manner in which parts are contained in the continuum, and also the seeds of St. Thomas' doctrine on heterogeneity. Because of its importance the passage is quoted in full.

> If the parts of some whole do not have some determinate quantity, whether in magnitude or smallness, but rather are of any quantity whatsoever either according to magnitude or smallness; it is necessary that the whole does not have a determined quantity of magnitude or smallness, rather the whole can be of any magnitude or smallness whatsoever. This is true because the quantity of the whole arises from the parts. (However, this must be understood of the parts actually existing in the whole, as flesh, nerves, and bone exist in the animal. This is what he means when he says: *I mean components into which, since they are actually present in it, the whole can be divided.* By this he excludes the parts of the continuum which are only in the latter potentially.) But it is impossible that an animal, plant or something of this kind be related indeterminately to whatever magnitude or smallness because there is some quantity so great that the quantity of no animal extends beyond this, and there is a limit in the other direction beyond which no animal is found; and the same is true of plants. Therefore it follows from the destruction of the consequent that neither are there some of the parts which have an indeterminate quantity because there is a similarity between the whole and the parts. But flesh and bone and such are the parts of animals, and the fruit etc., are the parts of plants. Thus it is impossible that flesh, bone, and the like have an indeterminate quantity, either according to greater or lesser. Therefore it is not possible that there are some parts of flesh or bone which are insensible because of their smallness.[19]

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[18] "Sic concludimus quod non est necessarium quod si aliqua quantacumque pars existens in toto movet, quod separatim per se existens movere possit: quia pars in toto non est in actu sed in potentia, maxime in continuis. Sic enim aliquid est ens sicut et unum, unum autem est quod est in se indivisum et ab aliis divisum; pars autem prout est in toto non est divisa in actu, sed in potentia tantum; unde non est actu ens neque una, sed in potentia tantum. Et propter hoc non agit pars, sed totum." (*Ibid.*, VII, lect. 9, n. 5).

[19] "Si alicuius partes totius non habent aliquam determinatam quantitatem sive magnitudinem vel parvitatem sed contingit eas quantascumque esse vel secundum magnitudinem vel parvitatem, necesse est quod totum non habeat determinatam magnitudinem vel parvitatem sed contingat esse cuiuscumque magnitudinis vel parvitatis: et hoc ideo, quia quantitas totius consurgit ex partibus. (Sed hoc intelligendum est de partibus existentibus actu in toto sicut caro, nervus et os existunt in animali; et hoc est quod dicit: *dico autem talium aliquam partium, in quam cum insint, scilicet, actu, dividitur aliquod totum;* et per hoc excluduntur partes totius continui, quae sunt potentia in ipso). Sed impossibile est quod animal vel planta vel aliquod huiusmodi habeat se indeterminate ad quantamcumque magni-

In the *Commentary on the Sentences* we read: "the part of the continuum before division does not have being in act, but only in potency."[20]

In his work *De sensu et sensato,* St. Thomas says: "A line of one foot is in potency in a line of two feet, but it is in act when it is divided from the whole."[21]

We have now seen a wide selection of texts taken from the works of St. Thomas. From these and similar passages we can certainly conclude that St. Thomas definitely held, contrary to Gredt, that the parts of the continuum are present in potency only.[22]

However, many scholars put forth the supposition that St. Thomas really held that some of the parts are in act, and that when he says that the parts are only in potency, he is only speaking in the sense that some of the parts are in potency but that there are other parts in act. That this is a false supposition is proved from the above texts and most of all from the fact that nowhere, in either his philosophical or theological writings does St. Thomas ever say or even allude to the actuality of the parts of the continuum. A complete investigation of his writings will show that in the mind of St. Thomas the parts are only in potency and in no way actual. It might also be noted that none of the writers on the continuum presume to give a reference to St. Thomas in support of their theory of actual parts—why not? Because St. Thomas never held for actual parts in any of his writings.

THE DOCTRINE OF ST. THOMAS

We have already seen that Gredt describes quantity as the order of parts in the whole. St. Thomas, following Aristotle, describes quantity by defining the quantum, i.e., the quantified thing. Aristotle's definition is

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tudinem vel parvitatem: est aliqua quantitas ita magna ultra quam nullum animal extenditur, et aliqua ita parva infra quam nullum animal invenitur; et similiter dicendum est de planta. Ergo sequitur ad destructionem consequentis, quod neque aliqua partium sit indeterminatae quantitatis, quia simile est de toto et de partibus. Sed caro et os et huiusmodi sunt partes animalis, et fructus partes plantarum: impossibile est igitur quod caro et os et huiusmodi habeant indeterminatam quantitatem vel secundum maius vel secundum minus. Non ergo est possibile quod sint aliquae partes carnis aut ossis quae sint insensibilis propter parvitatem." (*Ibid.*, I, lect. 9, n. 8).

[20] "Pars quae ante divisionem continui non habet esse actu, sed potentia tantum." (St. Thomas, *Super libros Sententiarum,* [ed. Mandonnet and Moos, Lethielleux: Paris, 1929-47], IV, dist., 10, q. 3, 3 ad 1; also dist. 44, q. 1, sol.).

[21] "Linea unius pedis est in potentia in linea bipedali, sed tunc est in actu quando dividitur a toto." (St. Thomas, *De sensu et sensato,* [ed. R. Spiozzi, Marietti: Turin, 1947], lect. 15).

[22] Besides the passages given cf. also, *De caelo,* lect. 3, n. 6; *Sum. theol.,* III, q. 76, a. 3, ad 1; *Sum. theol.,* III, q. 85, a. 8, ad 2; *Quodlibet.,* I, a. 21.

this: "Quantum means that which is divisible into those things which are present in it, of which each is by nature a 'one' and a 'this.' "[23] We may, perhaps, convert this definition and say that quantity for Aristotle is that accident of a thing in virtue of which it can be divided into its inherent components.

Quantity in itself does not necessarily include the notion of parts, as Gredt would have it. It is merely that accident by which a thing is extended and, therefore, divisible. Extension is not defined either by Aristotle or St. Thomas because it is one of the primary concepts which is had immediately through abstraction from the phantasm and, therefore, it cannot be defined through concepts which are better known. Gredt, however, attempts to describe extension as the ordering of parts outside of parts. This must not be considered as a definition; however, it is a good description. St. Thomas would hold, nevertheless, that these parts are only in potency.

Quantity for St. Thomas bespeaks divisibility. He does not hold that quantity *is* divisibility as some authors try to say, but rather that all quantified things are divisible simply because they are quantified and therefore extended.

In regard to the nature of the continuum itself, we must first investigate St. Thomas' position on act and potency, indivisibles, parts, and whole. By understanding these concepts we will more easily be able to see his reasons for rejecting the theory of actual parts.

In regard to act and potency we need mention only two points. First, potency is not mere nothing. It is a reality between being and non-being. This is not to say that the potential is just a little bit actual. The potential is in no way actual. The potential, then, is possibility, the ability to acquire a particular form. Act, however, implies existence. A thing insofar as it is in act has no potentiality in that regard. If it is in act, then it cannot become that which it is—*quod est non fit*. Thus a being in act is determined according to form and quantity.

Secondly, the potential being is disposed or related to act in one of two ways, either remotely or proximately, i.e., simply. To be in the state of simple potency demands that the thing be but one step away from receiving its form and determination. St. Thomas states this clearly:

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[23] "Quantum dicitur id quod est divisibile in ea quae insunt quorum utrumque vel unumquodque, natum est esse unum quid et hoc aliquid." (Aristotle, *Metaph.*, V, c. 13, 1020a7-8; cf. also, *In Metaph.*, V, lect. 15, n. 977).

It must be noted that when Aristotle says that it is divisible into those parts which are in it, he is not stating that these parts are in act in the undivided continuum. A study of his writings will show that the word he uses here (enyparchonta), which is translated by the latin *insunt*, is reserved by him to signify only those things that are in potency. cf. Hoenen, *Cosmologia*, (Universitas Gregorianae, Rome: 1956), p. 17.

> A thing is said to be in potency to something *simpliciter* when it can be immediately reduced into act by a single agency. Just as we do not say that a statue can be made from earth, but rather from copper; even though the copper is made from the earth.[24]

The parts of the continuum for St. Thomas are in potency only, and in the state of simple potency so that all that is required for them to exist formally as parts in act is a single act of some agency, which we call division. St. Thomas makes this clear when he says: "by resolution of the whole into parts, the parts begin (*incipiunt*) to be in act."[25]

This, then, is what St. Thomas means when he says that the parts are in potency. These parts before division have no determination; that determination is given either by division or at least by designation.

Our second consideration in the doctrine of St. Thomas falls upon the indivisible. Gredt, as we have seen, divides quantity into lines, surfaces and bodies. These are species of quantity, but they are species only when quantity is considered mathematically. In reference to physical quantity, however, lines and surfaces are no longer species of quantity, but rather they pertain to quantity only reductively in the same way that a point pertains to quantity only reductively. The reason for this is that in physical quantity lines and surfaces are found only insofar as they are contained in bodies as indivisibles of that body, i.e., insofar as they terminate the quantity of that body. In this sense they are modes and pertain only reductively to quantity.

A mode is that which bespeaks determination.[26] St. Thomas in speaking of mode says:

> the form presupposes determination or commensuration of its principles, whether material or efficient, and this is signified by the mode; hence it is said that the measure pre-fixes the mode.[27]

This is a general description of mode applicable to all different types of modes. Applying St. Thomas' definition of mode to our present problem, it simply means that a point, for example, is a mode of the line in that the point is the determination of the line. For, as St. Thomas says,

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[24] "Illud dicitur simpliciter esse in potentia ad aliquid, quod potest statim reduci in actum uno motore, sicut non dicimus, quod ex terra possit fieri statua, sed ex cupro, quamvis ex terra fiat cuprum." (II *Sent.*, dist. 19, q. 1 sol.).

[25] "Resoluto toto in partis incipiunt partes esse in actu." (IV *Sent.*, dist. 10, q. 3, a. 3, ad 1; also, dist. 44, q. 1, a. 2, 4).

[26] *Sum. theol.*, II, II, q. 27, a. 6.

[27] ". . . praeexigitur autem ad formam determinationem, sive commensuratio principiorum sive materialium sive efficientium ad ipsam; et hoc significatur per modum; unde dicitur quod mensura modum praefigit." (*Ibid.*, I, q. 5, a. 5).

"the point is a certain indivisible which terminates and divides the line."[28] He uses the example of the point but the same is true of a line insofar as it terminates a surface, and of a surface insofar as it terminates a body.

It is for this reason that the points at the terms of the line are in act, for it is the point that gives determination and finality to the line. If lines, surfaces, and bodies did not have indivisibles at their terms, they would be penetrable and infinite.[29]

These indivisibles, however, are not the mere negation of further extension. They are positive realities distinct from the body they terminate by a real modal distinction. This idea of mode is of prime importance if we are to understand St. Thomas' rejection of actual parts.

We come now to a consideration of the part and the whole. What does St. Thomas mean when he speaks of the part and the whole? Following Aristotle, St. Thomas gives several definitions of "part," only two of which pertain to quantity. "Part" considered quantitatively means "that into which a quantum can in any way be divided; for that which is taken from a quantum *qua* quantum is always called a part of it."[30] However, part also means "only those [parts] which measure the whole so that in the first sense two is a part of three, but in the second sense it is not."[31] What he is saying here is that because two can be taken away from three it can, in that sense, be called a part of three. However, two cannot be called a part of three in the sense that it is the measure of three. Two, in this sense of measure, can rightly be called a part of four since it is a commensurate ratio of four.

It is seen from this that "part" contains the notion of separation or division in its very nature. A part is not able to be conceived without setting it off from the whole. This division, says St. Thomas, can come about in one of two ways: either by physical division or by mental designation. Thus because "part" of its very nature connotes division, St. Thomas will later show that the parts cannot be in act in a continuum.

If, then, this be the nature of part, the whole will be that which is divided into its parts.[32] A whole is of two types: continuous and discrete. A discrete whole, whose parts are in act, such as in a pile of stones, is less a whole than a continuous whole, whose parts are only in potency.[33] Thus we can rightly speak of a whole house and of a whole line, but in the first sense the parts will be in act and in the second, in potency.

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[28] "punctum autem est quoddam indivisibilem quod terminat et dividit lineam." St. Thomas, *In Post. Anal,* (ed. Leonina, *Omnia Opera,* I, Rome, 1889), II, lect. 10, n. 7.

[29] *In Phys.,* VI, lect. 4, n. 1-4.

[30] Aristotle, *Metaph.,* V, c. 25, 1023b12-18.

[31] *Ibid.* (parentheses mine)

[32] *Sum. theol.,* I, q. 76, a. 8.

St. Thomas' doctrine on quantity can be summarized by saying that although quantity cannot be defined, it can be described through this, that it bespeaks divisibility—it is that in virtue of which the whole can be divided. This notion of quantity does not include the necessity of the parts beng actual. The terms "part" and "whole" are correlatives, i.e., one cannot be conceived except in terms of the other. A discrete whole is that whose parts are in act; a continuous whole is that whose parts are only in potency before division.

We are now ready to consider St. Thomas' reasons for rejecting the theory of actual parts in the continuum. He shows the impossibility of actual parts directly and indirectly. He shows it indirectly from the nature of the indivisible, and directly from the essential characteristic of the continuum which is its unity.

In regard to his indirect argument, he shows that the indivisibles cannot be in act in the continuum. He says:

> But in a continuum, while the continuity lasts, there are infinite points, not in act, but in potency. Because if someone were to actualize some part it would be through division, . . . insofar as the point would be considered as the beginning of one half and the term of the other. Thus it will not remain a continuum but it will be terminated, i.e., the halves now in act will not be infinite, but there will be a limit in them. This is especially the case when one wishes to enumerate the halves, because then one would necessarily consider one point as though it were two, that is, as the term of one half and the beginning of the other. And I say that this is the case when the whole continuum is not counted as a unit, but when two halves are designated in it. If the whole continuum were considered as a unit, then as has been said, the dividing point would not be taken as an actual term and principle, but would be merely potential.[34]

What St. Thomas is saying here is that if we hold the indivisible to be in act in the continuum, such as a point in a line, then the continuity of that line ceases at that point. The reason for this is that the point, or

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[33] *In Metaph.*, V, lect. 21, n. 1102. The text is cited in fn. 16.

[34] "Sed in continuo dum continuitas durat infinita media non in actu, sed in potentia: quia si faciat aliquis aliquod medium inesse in actu, hoc erit per divisionem. . . . inquantum accipietur ut principium unius et finis alterius; et sic non remanebit continuum sed stabit: idest iam media in actu non erunt infinita sed in eis erit status. Quod maxime accidit in eo qui vult numerare media: quia necesse est ei quod unum signum numeret quasi duo, inquantum est unius medietatis finis et alterius principium." (*In Phys.*, VIII, lect. 17, n. 7.)

any indivisible, is the mode or determination of the body which it terminates. Thus if the point is in act, even though it is only one materially, it has, nevertheless, a double formality, namely, it terminates the first segment and begins the second. This double formality is sufficient to break the continuity, as St. Thomas has just pointed out.

This argument can be clarified if we relate it to a consideration of reflexive motion, as St. Thomas does in the eighth book of the *Physics,* where he asks whether reflexive motion is continuous.[35] He answers that reflexive motion, whether in a straight line or in a circle, is not continuous because when the mobile reverses direction there falls between the two motions a period of rest, i.e., the mobile in its line of motion actualizes the point at which it reverses its direction, and thus, this point terminates the first motion and begins the second. An actual indivisible in the continuum serves the same function and thus the continuity is broken. From this it can be seen that there can be no actual indivisibles within the continuum. If, however, there are no actual indivisibles, then there can be no actual parts because every actual part must be terminated by an actual indivisible.

It is interesting to note that in the two passages quoted earlier, John of St. Thomas uses this same argument. However, he has completely turned it around so that he has come to the opposite conclusion, namely that the indivisibles in the continuum are in act.

St. Thomas' second argument is based on the unity of the continuum, and is directed against those parts that are called "integral," i.e., those parts having the same *ratio* as the whole. Thus, if the whole is a physical body, then the parts will be physical bodies; if the whole is a surface or line, then the parts will be surfaces or lines.

St. Thomas argues from the standpoint of substance extended through quantity. If these parts are beings in act, then they will be substances in act. St. Thomas ,together with Aristotle, argues that there cannot be one continuum actually composed of many substances, for the continuum is an *unum per se.*[36] Their argument can be stated as follows: that which is one in act cannot be many in act at the same time and under the same respect; if the parts are beings in act, then the continuum would be *multiplex in actu* under the aspect of substance. Therefore they conclude that the parts of a continuum cannot be in act.

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[35] *Ibid.,* lect. 16, n. 8.

[36] Aristotle, *Metaph.,* VII, c. 13, 1039a3; also *In Metaph.,* VII, lect. 13, n. 1588.

R. P. Phillips, commenting on this solution, has this to say:

> The argument which Aristotle and St. Thomas used to prove their opinion is of extreme simplicity and clarity. The first, and most essential characteristic of the continuum as a species of quantity is its unity. If the continuum were not essentially one, we should have, not continuous but discrete quantity. This being so, it is impossible that the parts should be actual, since the least that this could mean would be that they are already actual entities, and so actual unities. A number of such unities, however, even if in juxtaposition, could never constitute an entity which was essentially one . . . So we may express this simple truth by saying that if the parts are actual entities, they will be actually many, and so cannot at the same time be actually one, or a continuum.[37]

We have now seen the two main arguments given by Aristotle and St. Thomas as to why the parts cannot be in act in a continuum. The parts of a continuum are beings in potency only, and they are in the state of simple potency, i.e., they are but one step away from act. This step is taken through division without any eduction of a new form, without any permanent alteration, and without any generation and corruption.[38]

We have now only one question that remains to be answered: how are the parts distinguished among themselves? Are they distinct by a real distinction or merely by a distinction of reason? This question can be answered simply. If we hold with the modern interpretation that the parts are in act, then it follows that the parts are really distinct. If, on the other hand, we follow the text of St. Thomas, then we must hold that these parts are distinct by reason only, i.e., they are only divisible before actual division.

CONCLUSION

We have now seen both sides of the argument. Gredt, on the one hand, holding for the actuality of the indivisibles and of the parts, and St. Thomas, on the other, holding for the actuality of the whole and the potentiality of the parts. Must we then say that Gredt and St. Thomas are directly opposed to one another and that there is no possibility of conforming the two views? Phillips believes that this is the case.[39] Others say that Gredt means by "part" only the actuality of the matter and in this sense the parts will be in act, but that St. Thomas means "part" as divided and in this sense they will not be in act.[40]

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[37] R. P. Phillips, *Modern Thomistic Philosophy*, (Burns, Oates and Washbourne Ltd.: London, 1934), p. 73.

[38] Hoenen, *Cosmologia*, p. 16.

[39] R. P. Phillips, *op. cit.*, p. 72.

[40] E. Hugon, O.P., *Philosophia Naturalis*, (Lethielleux: Paris, 1905), I, p. 190-191; cf. also, F. Maquart, *Elementa Philosophia*, (Blott: Paris, 1937), p. 64.

This possible reconciliation can be taken for what it is worth. However, it seems that Father Gredt implies a lot more than merely the actuality of the matter when he says: "according to the essence of every continuum there are parts in act, abstracting from those parts made by some designation or division."[41] It would seem from this that Father Gredt means part formally as part, i.e., he intends to treat "part" in exactly the same sense as it is treated by Aristotle and St. Thomas. Yet John of St. Thomas and Father Gredt come to the opposite conclusion as that reached by the Holy Doctor. Thus it seems that if we wish to do justice to St. Thomas, we cannot say that the two views are identical.

Gerard Halloran, O.P.

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[41] Gredt, *op. cit.*, I, p. 263.

DANTE'S POLITICAL LIFE AND THOUGHT

BACKGROUND

Florence in the thirteenth and fourteenth centuries was a gay, turbulent city, fostering the growth of politics among her many factions and parties. She stood out as the active patroness of democracy and the head of the cities around her. Everywhere else in Western Europe, the failing Holy Roman Empire "aimed at being one in its administration and law; but it was not a nation nor were its provinces nations."[1] Yet it sought to unify them—Italy alone remained divided. It was a country of independent city-states, each with its own despot, waging countless wars, making it almost impossible for the Roman Emperor to rule them. And throughout the whole country, the two major parties, Guelf (middle-class and papalist) and Ghibelline (nobles and imperialist), were in a death struggle for power over Italy. In 1266, at the battle of Benevento, the imperialist Ghibellines were defeated and the Church with its Guelf party was in control.

Just one year previous to Benevento, Dante Alighieri was born in Florence, his birth coinciding "with the establishment of the first articulate democracy of the Christian era—the free commune of Florence."[2] This was the background for one of the most important parts of Dante's life—his role as a politician.

From the beginning of his early manhood to his death, Dante was to be immersed in politics. The city he so passionately loved was a center of intrigue and death, where an utterance of a political nature often determined how soon a man would rest in his grave.

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[1] R. W. Church, *Dante and Other Essays* (London: Macmillan, 1888), p. 10.
[2] Paolo Milano (ed.), *The Portable Dante* (New York: Viking, 1956), p. viii.

DANTE'S EARLY EDUCATION

Dante was an enthusiastic scholar. One could say that his knowledge was all-embracing. He was a close and clever student of the physics, astronomy, mathematics, geography, philosophy, and theology of his time. Little escaped his careful observation. He was well-acquainted with the social and political history of most of the European countries. Of course, the greater part of his studies were taken up with Thomistic doctrine which was for the thirteenth century scholars "the recent and greatest feat of medieval philosophy—the final reconciliation of Aristotelean thought and Christian dogma worked out by Thomas Aquinas."[3] Dante himself tells us in his *Convivio* that he came to learn his philosophy from the Dominican Friars at Santa Maria Novella in Florence. It is most probable that the famous preacher and Dominican lector, Remigio de' Girolami, was the link between St. Thomas and Dante in matters of philosophy and theology, as well as on the fundamental point in political theory that "man is naturally a political animal."

As Dante's education increased, he became familiar with the greatest writers of pagan and Christian antiquity, especially with Aristotle, Virgil, and St. Augustine. They in their turn helped him to formulate his political philosophy. But it was St. Thomas and Thomistic thought which helped Dante to synthesize into a coherently elaborated and definitely formulated system all of his vast range of conceptions and interests. As a result, "his course of thought advances, alters, deepens but is continuous. . . . It may assume various changes . . . but still it holds in self-imposed and willing thraldom, that creative and versatile and tenacious spirit."[4]

POLITICAL LIFE

In order to grasp the importance of Dante's political philosophy, it is necessary first to understand the part which politics played in forming his unique personality.

It was a common thing in Dante's time and in an Italian city for a popular poet to be concerned with the affairs of state. Party faction was the stuff of the times. All citizens in some way or another were connected with political doings and the more famous a man, or a poet, was, the more likely was it that he would be involved in politics.

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[3] *Ibid.*, p. xii.
[4] Church, *op. cit.*, pp. 55-6.

As was mentioned previously, the Guelf party took over control of Florence and most of Italy. They had traditionally been supporters of the Papacy and while they opposed all imperialistic interference, they also wanted to avoid subservience to the Roman Pontiff. They jealously guarded the independence of Florence and this caused the Pope much concern for he had to consider the balance of power in all of Europe, but especially among the Italian cities because of the danger there to the Papal lands. As Florence grew in power, she grew in arrogance.

Conflicting elements in the Guelf party split it into two factions, the Whites and the Blacks. The Whites were a strange grouping of petty nobility and lower artisans; they stood for a strong independence from both "throne and Altar." The Blacks were the more aristocratic faction who were willing to compromise with the Pope if they could gain control of the city.

In 1295 Dante became active in Florentine politics, holding various offices (as a member of the White party) until June 15, 1300, when he was elected a "prior of the guilds"—one of the chief magistrates of Florence. Soon after, the bloody faction fights came to a head with the Whites expelling the Blacks from the city in May, 1301. Following Dante's advice, the magistrates banished the most avid chiefs of both parties for the sake of municipal peace.

Peace did not remain long, however. The heavy hand of Pope Boniface VIII had become more and more evident to the Florentines as he increased his interference in city politics. His outward purpose was to bring peace, but a peace ruled over by the party most favorable to the Papacy—he was working for a showdown with the White party. When the expelled Blacks urged the Pope to summon French aid to help them regain power in Florence, Boniface sent Charles of Valois to the city as an "arbitrator"—this was in September, 1301.

Dante was not only alarmed and outraged at the Pope's action, but he became one of the most outspoken critics of Boniface VIII. In later years he would assign Boniface a place in the Hell of the *Divine Comedy*, referring to him in the words of one of the damned:

> Art thou so quickly sated with that wealth, for which
> thou didst not fear to seize the comely Lady by deceit,
> and then make havoc of her?[5]

Dante is speaking here of Boniface's pretentions to political dominance, using the Church ("the comely Lady") to further his worldly aims.

It must be noted, lest a false impression be formed, that Dante never spoke out against the Church or Papacy in themselves. What he did do was to decry the abuses introduced by the individual men who held the ecclesiastical offices. His love for the Faith was so strong that when Philip IV of France took Boniface VIII captive because the Pope refused to yield the independence of the clergy in France to the Crown, Dante looked upon his old enemy, Boniface, as a hero and a martyr. For in his eyes, the barbarous treatment of the Pope which brought about his death was a profanation of the Papacy and hence of Christ Himself. Dante later spoke of this infamous attack upon Boniface VIII in these words:

> I see the fleur-de-lys enter Alagna,
> and in his vicar Christ made captive.
>
> A second time I see him mocked; I see the
> vinegar and gall renewed and him slain
> between living thieves.[6]

He would speak and write against other men holding high ecclesiastical offices, but always it would be against the individuals and not the office; against the abuses and not the Church.

The poet's great alarm over the Pope's appointed arbitrator was well founded for when Dante went to Rome to negotiate an agreement with Boniface VIII, the so-called "peacemaker," Charles, began to feather his own nest at the expense of Florence and to extend favors to that faction which best enabled him to increase his gains; it happened to be the Blacks, the faction opposed to Dante.

> As was usual in the turns of fortune in such communal struggles, the party that had fallen out of favor was ruthlessly supressed and scattered. During the year following the coming of Charles of Valois, more than six hundred members of Dante's party were sentenced either to death or banishment. Dante was among the exiles.[7]

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[5] Dante Alighieri, *The Inferno,* trans. John A. Carlyle (London: Dent, 1932), XIX, 55-9.

[6] Dante Alighieri, *The Purgatorio,* trans. Thomas Okey (London: Dent, 1932), XX, 86-90.

[7] Alice Curtayne, *A Recall to Dante* (London: Sheed and Ward, 1932), p. 39.

Dante, who had been purposely detained at the Papal court while the Blacks gained power in Florence, learned of his exile on the way back to his beloved city. This was on January 27, 1302—he was thirty-seven years old.

The Blacks drummed up a false charge of barratry against Dante. As a penalty he was condemned to pay within three days the enormous fine of five thousand florins; to be banished from the city for two years; and to be forever excluded from holding public office. If Dante had been able to pay the fine, he would have been pleading guilty, by implication, to the unjust charge of the Blacks.

On March 10, 1302, Dante's refusal to appear in Florence and plead guilty caused his exile to be made perpetual, and he was condemned to be burned alive should he ever again cross the territory of the Florentine Republic.

For the rest of his life Dante lived in exile from the city he loved so much. Often he would vent his anger upon Florence: "The new people and the sudden gains have begot in thee, Florence, arrogance and excess so that already thou weepest for it!"[8] but always he regarded her with a longing that could not be concealed:

> After it was the pleasure of the citizens of that fairest and most famous daughter of Rome, Florence, to cast me out of her dearest bosom . . . a stranger, almost a beggar. . . . Truly I have been a ship without sail and without rudder, wafted to divers havens and inlets and shores, by the parching wind which woeful poverty exhales.[9]

Not being content to remain an exile, Dante along with his fellow Whites planned a military comeback to regain Florence. However, he soon became disgusted with the intrigues of the White party and broke off from "the crew stupid and venomous" to make a "party of [himself] alone."

Many times Dante was offered opportunities to return, but the amnesty required a public atonement. Dante would never compromise his high principles, even to reenter Florence. He refusd to admit himself guilty of the false charge of barratry. In fact, so great a hatred did he have for the sin of barratry that he devoted more space to it than to any other sin in his *Inferno*.

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[8] Dante, *Inferno, op. cit.*, XVI, 73-5.

[9] Dante's *Il Convivio*, quoted by P. Milano, *The Portable Dante, ed. cit.*, p. xiv.

The only hope he retained of ever returning to Florence was that his *Divine Comedy* would open the gates of the city to him once more:

Should it e'er come to pass that the sacred poem
to which both heaven and earth so have set hand,
that it hath made me lean through many a year.

should overcome the cruelty which doth bar me
to sleep, a lamb, foe to the wolves which
war upon it;

with changed voice now, and with changed fleece
shall I return, a poet, and at the font of my
baptism shall I assume the chaplet.[10]

His poetry did not hold the key to unlock the gates of Florence.

RISING HOPES IN HENRY VII

Dante faded from the political scene after his exile. He began writing more extensive and progressively more serious works: *Il Convivio* (c. 1304), an unfinished work extolling the study of philosophy and containing the first hints of political thought; *De Vulgari Eloquentia* (c. 1305), a treatise in Latin, the aim of which is to establish the Italian tongue as a literary language on a par with Latin; *De Monarchia* (c. 1312), a treatise containing his theory of the world-monarchy.

But then, from 1310 to 1313, Dante again bounded to the forefront of political life. The disputed crown of the Roman Empire had fallen to the Count of Luxembourg who became Henry VII. In him, Dante saw the fulfillment of a political dream which he had been formulating during his exile: a God-appointed prince who would be separate from the ecclesiastical power and who would lift Italy, Florence, and the world from the bondage of corrupt rulers and churchmen through the rule of his world-monarchy or world-empire. To Dante it appeared as if Henry was the man to accomplish this. Even Clement V, Pope at this time, urged Italy to welcome Henry VII as he marched into the country at the head of a large army. He came to his capacity as Emperor to make peace among the waring Italians.

With an enthusiastic burst of hope, Dante began writing his three famous political letters (V, VI, VII). To the Italians he cries:

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[10] Dante Alighieri, *The Paradiso,* trans. Rev. Philip H. Wicksteed (London: Dent, 1932), XXV, 1-9.

> O Italy! henceforth rejoice; . . . the solace of the world and the glory of thy people, the most clement Henry, Divus and Augustus and Caesar is hastening to the bridal. . . . He shall release thee from the prison of the impious . . . and shall destroy them with the edge of the sword. . . .
>
> He it is whom Peter, the vicar of God, exhorteth us to honor, whom Clement . . . doth illuminate with the light of the apostolic benediction; that where the spiritual ray [the Church] sufficeth not there the splendor of the lesser luminary [the Empire] may give light.[11]

Against the Florentines who were reluctant to accept a foreign invader and who were arming against Henry, Dante thundered:

> You who transgress divine and human law, whom a dire rapaciousness hath found ready to be drawn into every crime—doth not the dread of the second death pursue you? . . . Where ye think to defend the corridor of false liberty, there shall ye fall into the dungeons of true slavery.[12]

Then to Henry, Dante wrote a passionate letter urging him to desist besieging Bremona and to delay no longer in crushing his real foe, "the poisonous hydra," Florence:

> Be ashamed to be entangled so long in a little narrow plot of the world. . . . The Tyranness of Tuscany [Florence] is strengthened in the confidence of delay and daily exhorting the pride of the malignant ones gathereth new strength and addeth audacity to audacity. . . .
>
> Come then banish delay! thou lofty scion of Jesse. Take to thee confidence from the eyes of the Lord God . . . and lay this Golias low with the sling of thy wisdom and the stone of thy strength.[13]

Dante's crusade against Florence stopped short of taking up arms himself against the city. It was still the place which held captive his heart and soul—he was first and foremost a Florentine.

Just when events seemed ripe for the fulfillment of his political hopes, Dante was once more bitterly disappointed. Pope Clement V fearing that the balance of power was swinging too much into the control of Henry, changed his mind about the Emperor and turned the King of Naples against him. A struggle ensued, but before anything certain was determined either way, Henry contracted a fever at Buonconvento, near Siena, and died on August 24, 1313.

The campaign for Empire was smashed and so too, Dante's hopes and dreams for a world of peace and for the revival of the Roman Empire.

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[11] Dante Alighieri, *Epistles V, VI, VII,* in P. Milano, *op. cit.*, pp. 651-2.
[12] *Ibid.*, pp. 653-5.
[13] *Ibid.*, pp. 656-7.

DANTE'S POLITICAL PHILOSOPHY

In the development of Dante's philosophy, there will emerge three major factors which will indicate the possible themes or layers in his political thought; these are the City, the Empire, and the Church. They contain the main problems which faced Dante in the late thirteenth and early fourteenth centuries. Although there is no clear-cut chronology involved in these three sources, it is, nevertheless, possible to trace their development in his writings.

THE CITY

Of the three factors mentioned, the oldest and deepest is:

> Dante's notion of the city-state or "civitas," the corporate unit in which he was born and which provided not only what would be called nowadays his "background," but also the stage on which he actively took part, during what was after all the longest span of his life, in the turmoil and evershifting fortunes of medieval politics.[14]

We tried to bring out this idea in the first part of the article because it is so fundamental. No study of Dante, the political theorizer, would make sense without a notion of his city-state experience. Unfortunately, there are very few documents which give us his speculative approach to politics during the early years of his political life. This is mainly due to the fact that he was "active" at this time; he "lived" his politics instead of writing them.

Even later, when he was working on his great theory of the Empire (in the *De Monarchia*), the core of his political philosophy remained "civic." He never became an "imperialist" without qualification. We get a hint of this in his *De Vulgari Eloquentia* when he speaks of himself as a citizen of the world (a cosmopolitan) because, as he says, it is a more reasonable judgment to be so, but immediately following this statement, Dante expresses his real feelings: "And although as regards our own pleasure or sensuous comfort there exists no more agreeable place in the world than Florence."[15]

The municipal spirit is found in most of Dante's work. It pervades many of the great Cantos in the *Divine Comedy*. The eighth Canto of *Paradiso* shows Dante's unhesitating esteem for citizenship: Charles Martel asks: "Now, say, would it be worse for man on earth were he no citizen?' 'Yea,' I [Dante] replied, 'and here I ask no reason.'"[16] Dante believed that unless a man were a citizen, he would be living only a half life. This is so because the co-operation of city life is an absolute essential for man's full development. In other Cantos the value of citizenship is stressed, as well as the ideal of city life. Throughout the whole fabric of the *Comedy,* we can discern how deeply Dante was imbued with civic loyalty and pride.

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[14] A. P. d'Entreves, *Dante as a Political Thinker* (Oxford: Clarendon Press, 1952), pp. 8-9.

[15] Dante Alighieri, *De Vulgari Eloquentia,* in P. Milano, *op. cit.*, p. 633.

The real basis for Dante's view of citizenship and of the importance of the city is unquestionably taken from the Aristotelian-Thomistic principle that a "man by nature is a political animal." Dante supplemented his active Florentine background with the most up-to-date political philosophy of his day—Aristotelian-Thomism.

But if the city was the beginning or foundation of Dante's political philosophy, it wasn't the end. His own political misfortunes attested to the city's shortcomings. He saw its inadequacies for attaining the peace-enjoyment of the "good life."

When Dante began his long banishment from Florence, the Empire had been in abeyance in Italy for more than fifty years. Dante saw his country going astray during this period of the "interregnum." Violence and disorder were rampant. It seemed as though law was powerless and wherever selfishness chose to have its way, neither power nor social habits could resist. He looked upon the Church and saw that she was still the salt of the nations who "taught, elevated, solaced, blessed, not only individual souls, but society; she had for a time even governed it, but though her powers remained, she could govern it no longer."[17] It was next to impossible to maintain peace and law in Italian towns. In his most passionate lament over Italy's misfortunes, the Poet says:

> Ah Italy, thou slave, hostel of woe, vessel
> without pilot in a mighty storm, no
> mistress of provinces, but a brothel![18]

All of this conveyed one idea to Dante: the cause of such misfortune was the absence of justice among men, which could only be restored through the revival of the universal Empire; it was because the Empire had been almost forgotten that chaos entered into society.

A new idea was beginning to show itself on Dante's political horizon—the Emperor and his world-monarchy. He went out to greet it with all of the philosophical wisdom and experience he possessed.

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[16] Dante, *Paradiso, ed. cit.,* VIII, 115-17.
[17] Church, *op. cit.,* p. 93.
[18] Dante *Purgatorio, ed. cit.,* VI, 73-5.

THE EMPIRE

The complete development of Dante's theory of the Empire is contained in his logical, Aristotelian work, *De Monarchia.* It is neatly broken down into three books, each expounding one important thesis of his Imperial theory. We will follow Dante's division in treating this aspect of his political philosophy.

Thesis I. The world should be united under one sovereign rule, with all of the various republics and kingdoms subordinate to it.

As we have seen, Dante knew well the results of cities and kingdoms fighting among themselves: "But the condition of the world since the day when the nail of greed tore that seamless garment is something we can all read about, if only we did not have to see it, too!"[19] To lift the world from the many battles and wars which tear her apart, it is necessary that justice be introduced, for "the world is best ordered when justice is its greatest power."[20] But only when it resides in a unitary government will justice reach its highest point. A universal Emperor will best insure justice because he will be without greed or evil desire of any kind; being the political head of the whole human race, there will be nothing more he could desire. As Aristotle says in Book V of the *Nichomachean Ethics,* take away greed completely and nothing opposed to justice remains in the will. Besides, this Emperor will be a philosopher-king, ruling by reason, making it possible for peoples to be free. The world-monarchy will establish the common norms or laws whereby local governments will be able to conduct their own internal affairs. The predominance of the principle of justice in civil society was what Dante yearned after. His Emperor would realize it for him.

The basic principle which guided all Dante's arguments for a world-government was this: Humanity has the definite task to actualize all that the human intellect is capable of; it must produce all the arts and sciences which God meant man to have. But the intellectual power or potentiality cannot be completely actualized in any one man or in any of the particular communities (i.e., family, neighborhood, city, state), so Dante proposed that:

> there must be a multitude in mankind through whom this whole power can be actualized; just as there must be a multitude of created beings to manifest adequately the whole power of prime matter. . . . With this judgment Averroes agrees in his commentary on *De anima.*[21]

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[19] Dante Alighieri, *De Monarchia,* trans. Herbert W. Schneider (New York: Liberal Arts Press, 1957), I, 16, p. 23.

[20] *Ibid.,* I, 11, p. 13.

[21] *Ibid.,* I, 3, p. 6.

The collective effort of all humanity, or the whole body corporate of mankind will be able to achieve what neither the individual nor the local corporate body can achieve: to allow the potentialities of the total human intellect to be actualized at all times and all at the same time. Only the world-monarchy, or the Empire, can secure the perpetual actualization of the whole of "humanitas," quantitatively and qualitatively because only it can free the "humana civilitas" from the impediments of war and other forms of civil strife.

Was Dante, then, an Averroist? We can best see the falsity of such a conclusion by comparing the doctrines of each man on this point.

> The Averroist dreamt of a separate world intellect to be actualized in, or by, the philosopher, the "individual"; Dante, however, thought of the "collective." He had in mind an immanent world-intellect which was not separate from its individual human constituents, though it transcended each one of them, and which could be actualized in its fullness only by an "universitas" acting as "one man," as a collective individual.[22]

> Averroes conceived the possible intellect as a single entity, an intellectual substance wholly independent of the body—in short, what Christians call an angel—and he taught that, to an individual man, knowing means simply sharing in some part or other of the knowledge possessed by this intellect.[23]

For Dante, it was the human race which constituted the universal community of all the possible intellects. This multitude of individuals will be able to attain its goal when the unity of the world-monarchy will be imposed upon it by the Emperor.

Some have thought that Dante found a starting point in Averroism, although he did not adopt such a doctrine. It seems more correct, however, to say that at the root of Dante's principle there can be found Aristotle's metaphysical concept that:

> . . . no one is able to attain to the truth adequately, while, on the other hand, we do not collectively fail, but every one says something true about the nature of things, and while individually we contribute little or nothing to the truth, by the union of all a considerable amount is amassed.[24]

Or in its broader application this principle would be: The full or total perfection of human nature, including all of its individual variations is not found in any one individual or nation, but only in the whole human race collectively considered.

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[22] Ernst H. Kantorowicz, *The Kings Two Bodies* (Princeton University Press, 1957), p. 475.

[23] Etienne Gilson, *Dante the Philosopher*, trans. David Moore (New York: Sheed and Ward, 1949), p. 169.

[24] Aristotle, *The Basic Works of Aristotle*, Oxford translation, (ed. Richard McKeon (New York: Random House, 1941), *Metaphysics* II, c. 1, 993b 1-4.

We can say, then, that Dante was not an Averroist. As we have seen, there was an essential difference between the two doctrines. In fact, Dante never adopted any philosophical principle that was at variance with the faith. For him, the teachings of both philosophy and revelation tended in the same direction.

So the proper goal for mankind taken as a whole and in the natural social order is "to exercise continually its entire capacity for intellectual growth, first, in theoretical matters, and, secondarily, as an extension of theory, in practice."[25] The best means for attaining this is universal peace because mankind is most free and can most easily carry on its work when it enjoys the tranquility of peace. This peace can only be completely assured by the world-monarchy.

In considering this first thesis of Dante, we have touched upon his most original, personal contribution to the history of political philosophy. For the most part, his work reproduces the general knowledge of his age, but with a new slant; here, however, we find originality. The new idea is the "humana civilitas," the world community of all men, and this includes Christians and non-Christians alike. Two notions are implied in the Latin expression: *qualitatively,* "humanitas" means the truly human behavior; *quantitatively,* it means the whole human race. To achieve the highest perfection of "humanitas" *qualitatively,* all men have to contribute their share to the whole body of man; and accordingly, "humanitas" *quantitatively* or the human race, is like a single all-embracing community, a universal body corporate, like One Man which Dante calls "humana civilitas."[26]

> "humana civilitas" implied . . . a universal community bound by natural as well as intellectual or educational ties, by a mental attitude which was that of a citizen of the world polity. Dante did not in that connection avail himself of the term "corpus mysticum" . . . , but if ever there existed a secular "mystical body," it existed in Dante's "humana civilitas."[27]

This universal community of men represents the "corpus mysticum Adae" whose head is the Emperor charged with the task of leading mankind back from whence it came—to the terrestrial paradise, i.e., to natural perfection.

Thesis II. The lay universal Empire must be Roman. By this Dante means somewhat the same conditions as those which obtain in the

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[25] Dante, *De Mon., ed. cit.,* I, 4, p. 7.
[26] Kantorowicz, *op. cit.,* p. 467.
[27] *Ibid.,* p. 468.

Church. Just as the Universal Church is Roman, so must the Empire be Roman. In order for Dante to conceive of a universal temporal community, he had to borrow from the Church its ideal of a universal Christendom and adjust it to fit his temporal world-moarchy.

The basic principle for this thesis is that the old Roman Empire was constituted and guided directly by God, growing by His direct operation; hence, all her conquests were the result not of power, but of justice.

At one time, early in his political career, Dante had believed that every state was a "poena et remedium peccati." There was a strong background for this belief. The great Hildebrand claimed that the State had its origin in sin. He did not mean that the State was sinful; sin had made it necessary, but it was the divinely appointed remedy for sin, retraining and curbing man's sinful actions and passions. St. Augustine also influenced Dante. The great Father of the Church believed that there could be no true justice without the true religion, and that kingdoms were only great thieveries, "magna latrocinia," if this religion was not present.

Dante admits that he at one time believed that Rome had gained her power unjustly:

> There was a time when I too marveled at the way the Roman people made itself preeminent throughout the world without resistance, for in my superficial view, I thought that they obtained this power by force of arms and without right.[28]

He altered his views on these points to the full acceptance of the Thomistic notion that the State springs from the very root of human nature. It was this notion that he extended to prove the necessity of his world-monarchy.

If it was Dante's early politics which made him think that ancient Rome had acquired her world power by force, then it was Virgil who made him recant the earlier view for the acceptance of Rome's "providential mission." Virgil had sung the origin of Rome, and the justice and peace of Augustus Caesar; he had borne witness to the necessity of that universal monarchy, Rome, which, by ensuring peace, had made possible the coming of Christ. The Middle Ages regarded Virgil not only as an incomparable poet, but also as one endowed with prophetic insight. With Lactantius, Constantine, and Augustine, the people of the Medieval period believed that Virgil was, however unconsciously, a bearer of revelation and a herald of Christ.

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[28] Dante, *De Mon.*, *ed. cit.*, II, 1, p. 24.

The "plenitudo temporis'" mentioned by St. Paul, appeared to Dante to be coincident with the reign of Augustus. And it was the writings and prophecies of Virgil that convinced Dante of Rome's divinely appointed mission of world peace: "Remember, Roman, that you are to govern peoples. These are your arts. You are to impose the ways of peace, sparing those who submit and being inexorable to the proud."—*Aeneid,* VI, 851-53.[29]

Dante speaks of the many miracles that had saved Rome from destruction and he states: "The Roman Empire was helped to its fulfillment by divine intervention and aid; therefore, it was willed by God and still exists by right."[30] Dante goes on and on giving reasons why the universal Empire must be Roman. Rome's great historical past, so profoundly fixed in Dante's mind, was inseparably linked with his theory of the world-monarchy.

Thesis III. The head of the universal state must be independent from any political control on the part of the Church or its Pontiff. The universal monarchy must be a lay state of a kind.

Dante met with much opposition to this thesis. Against such autonomy for the universal Emperor his ecclesiastical opponents proposed the traditional arguments: the analogy of the sun and moon; the Donation of Constantine; the words of Christ about the "two swords," etc. To avoid lengthy discussion, we will show how Dante disposes of just one of these arguments, namely, the sun and moon analogy.

In the Middle Ages, it was believed that the two great luminaries of Gensis I, 16, referred to the Church (the sun) and to the Empire (the moon), and that as the moon depends on the sun for its light, so the Empire depends upon the Church. Dante points out the weaknesses in this argument:

> Thus I maintain that from the fact that the moon does not shine brightly unless it receives light from the sun, it does not follow that the moon itself depends on the sun. For one must keep in mind that the being of the moon is one thing, its power another, and its functioning a third. In its being the moon is in no way dependent on the sun, and not even in its power and functioning, strictly speaking, for its motion comes directly from the Prime Mover.
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> [Pointing out the syllogistic fallacy of the argument, Dante says:] Their argument runs thus: the moon receives light from the sun or spiritual power; the temporal power is the moon; therefore the temporal

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[29] *Ibid.,* II, 6, p. 38.
[30] *Ibid.,* II, 4, p. 30.

> power receives its authority from the spiritual power. In the major premise it is light that the moon receives and in the conclusion it is authority, which are two quite different things, both as to their substance and their meaning. . . .[31]

In like manner, he rejects the Donation of Constantine, claiming that it was illegal and invalid; the analogy of the "two swords" Dante says has been built up from a faulty interpretation of Christ's words.

The basic principle Dante uses in maintaining the autonomy of the world-monarchy and the Emperor is: Man aspires to two beatitudes, one natural, the other supernatural. Natural beatitude is reached through the exercise of the moral and intellectual virtues; supernatural beatitude, by the gift of the theological virtues. The rule over man as he strives toward the former is assigned by God Himself to the Emperor; man's guidance as he moves toward the other is entrusted to the Pope.

The Empire, therefore, is the instrument for the attainment of the end of the human race as a whole or of the "humana civilitas." This end as we have seen is the actualization of all that the human intellect of mankind (collectively taken) is capable of. In other words, it is the attainment of man's natural state before original sin.

Because Dante believes with Aristotle and St. Thomas that the State (and its extenion to the Empire) has a rational and natural foundation, he believes that man has a natural, final end distinct and separate from the spiritual end.

Dante holds the Thomistic notion of the two ends of man—natural felicity and supernatural happiness. Both Dante and St. Thomas believe that Church and State are two closed, self-sufficient, and sovereign systems of power; each is juridically equal to the other; each is autonomous in its own domain.[32]

St. Thomas states:

> Both the spiritual and the temporal power derive from the divine power; consequently the temporal power is subject to the spiritual only to the extent that this is so ordered by God; namely, in those matters which affect the salvation of the soul. And in these matters the spiritual power is to be obeyed before the temporal. In those matters, however, which concern the civil welfare, the temporal power should be obeyed rather than the spiritual. . . .[33]

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[31] *Ibid.*, III, 4, p. 60.

[32] I. T. Eschmann, "St. Thomas Aquinas on the Two Powers," *Mediaeval Studies,* XX (1958), 180.

[33] St. Thomas, *Aquinas Selected Political Writings,* trans. J. G. Dawson, ed. A. P. d'Entreves (Oxford: Basil Blackwell, 1954), *Commentary on the Sentences of Peter Lombard* II, dist. 44, q. 3, a. 4.

Parallel to this Dante says that the Church and the Empire are not only distinct in the different goals to which they aspire, but also the Pope and the Emperor have different species of power:

> Now since Pope and Emperor are what they are by specific relations, that is, by the Papacy and emperorship, which are themselves related to other relations, the papacy to paternity and emperorship to lordship, it is clear that as Pope and Emperor these two belong to two different kinds and that each is reducible to the norm of its own kind. . . . Neither can be said to be subordinate to the other, since the properties of either when applied to the other are false.[34]

In the *De Monarchia,* we read further that the Church has received her authority from Christ to lead man to the Beatific Vision. She was not set up as a temporal authority. It is a matter of historical fact that the Empire was prior to and independent of the Church. St. Thomas is of the same opinion when he says in the *Summa theologiae*: "The authority of Caesar preceded the disinction of faithful from unbelievers. Hence it was not cancelled by the conversion of some to the faith."[35] For Dante it is God alone, as the immediate source of imperial authority, who elects the Emperor, using the human electors as His divinely inspired instruments.

Dante's duality of goals does not imply a conflict of loyalties or even an antithesis of "human" versus "Christian" for he says that "in some ways our mortal happiness is ordered for the sake of our immortal happiness."[36] This is in line with St. Thomas' doctrine that the State can be subordinate to the Church "per accidens."

Although Dante believes that neither authority is subordinate to the other, he does maintain that the Pope's office is nobler than the Emperor's, since the Pontiff leads men to the noblest goal. When closing his great treatise, *De Monarchia,* Dante had this to say:

> Caesar therefore owes to Peter the piety which a first-born son owes to his father. And so, in the light of paternal grace, this government [the Empire] will better enlighten the globe, over which it rules through Him alone who is the ruler of all things spiritual and temporal.[37]

THE CHURCH

From the time of the writing of the *De Monarchia* (c. 1312) to the day when the *Divine Comedy* took final shape in his mind (after 1314),

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[34] Dante, *De Mon., ed. cit.,* III, 12, pp. 71-2.

[35] St. Thomas, *Summa Theologiae* (English Dominicans' transl., London: Burns Oates and Washbourne, Ltd., 1916), IIa IIae, q. 10, a. 10 ad 2.

[36] Dante, *De Mon., ed. cit.,* III, 16, p. 80.

[37] *Ibid.*

Dante's political philosophy underwent a complete change of emphasis. In the gradual development of his political thought, he had gone from the "City" to the "Empire" and now, in the final stage of his philosophy as well as his life, his interest and passion focuses on the Church. Of course Dante had always believed in the Church, holding it in the highest position of honor and respect, just as any good Christian would do, but in his zeal to find a remedy for the political evils of the times, he had emphasized other aspects of society. He did not consider them more important than the Church, but rather he thought that they were more equipped to abolish the particular evils about which he was concerned. Now, however, in his remaining years, Dante has come to realize that the Church holds the answer to all of man's problems of justice and peace.

It is hard to say just what caused Dante's change of outlook. Perhaps many things contributed to his new conviction that the temporal power must be subordinate to the Church: the collapse of his political hopes in Henry VII; the miseries of Italy; the Papacy's residency at Avignon with its consequent abuses. Whatever the cause, it is clear that in the latter years of his life (1314-21), Dante turned his energies from politics to religion; from the Empire to the Church. And in all his writings after the *De Monarchia,* it is Dante the religious reformer who emerges. Now his eloquence, his great erudition, his intense passion for justice and truth are all made to serve the purpose of turning the worldly minds of his fellow men to the abuses that abound in the Church. He cries out to them of the intrigues of palace and court. He begs them to redress the evils of the times because in the balance hangs their eternal salvation. Strengthen the Church, live your religion, render justice unto your neighbor—these are Dante's rallying cries. They are as passionate, if not more so, as the appeals he rang out for the Empire, but now religion replaces all, stands out above all, and is the answer to all because: "Religion to Dante was not an escape from the miseries of life; it was, above all, a powerful principle by means of which reality could be modified, and the world transformed from violence to goodness."[38]

Dante's political theories were an integral part of his religion. When he finally wrote the *Divine Comedy,* his political philosophy had become Church-centered. The final formulation of that philosophy was summed up in the immortal poem: (1) The idea of Rome—in the *Comedy,* it has become a Christian Rome; (2) the idea of Virgil—Virgil of the Poem, once the embodiment of reason, has now become a prophet, in addition to his former role. By a startling reversal of parts, the singer of the Empire now bears witness to the inadequacy of the purely human and rational, that is, of the purely political means to ensure man's redemption; (3) The attainment of the goal for mankind has become the responsibility of the Church and not of the Empire because it is now seen that man's temporal felicity is not a final separate goal in itself, but rather it is subordinate to his spiritual redemption, to his supernatural beatitude. And so, in the *Divine Comedy,* Dante has given his last thoughts on his political philosophy.

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[38] d'Entreves, *op. cit.,* p. 60.

CONCLUSION

From the beginning of his life to his death, Dante always had a "cause" before him. He was continually struggling for some ideal, not as an adventurer or a soldier of fortune, but as a true "idealist", as a philosopher. Whenever he gave support to something, it was because he had given it deep consideration and had found his choice of action to be the correct one. Sometimes he would make mistakes, when he realized them, he quickly turned himself to the right path.

His political philosophy was something like this. It started with his passionate belief in the city-state, gradually progressing through the Empire, and finally broadening out into the Church. He revised and enlarged his political thinking each time, not because he had found himself entirely wrong in the preceeding stages, but because he had discovered in them inadequacies. If there were present in his position certain aspects that fell short of his high ideals of justice and truth, he would abandon such a stand without hesitation to seek out a more perfect one. It did not matter if this meant joining the side he had previously been fighting. Truth was what mattered; the social and spiritual dignity of man was what counted.

So Dante could turn from one stage of his political thought to the next with honesty and sincerity. He did not abandon all the things previously held as he progressed. The best of his older theories he took with him and they gave a peculiar strength to the new ones. His former ideas of the city-state and the Empire were integrally united with his final theory of the Church; each of the three giving support to the other.

Finian Turner, O.P.

THE SUPERNATURAL ELEVATION OF THE HUMAN INTELLECT

In the revelation of Christ, man is promised the Beatific Vision. All the striving of the just man in his earthly life is to be rewarded by the direct vision of God, who is man's first principle and last end. St. Paul, whose intimacy with God was probably among the greatest ever achieved on earth, said, "we see now through a mirror in a dark manner, but then face to face. Now I know in part, but then I shall know even as I have been known."[1] In this life we know God as a blind man knows the distant landscape, through description by a trusted companion, through analogies with the things he can touch. This is the life of reason illumined by Faith which includes this promise of future vision, a life in heaven where we blind men will see God face to face. St. John too, anticipates this vision when he writes: "Beloved, now we are children of God, and it has not yet appeared what we shall be. We know that, when he appears, we shall be like to him, for we shall see him just as he is."[2]

This is the tradition which the apostles received from Christ, and this is the tradition which persists in Christ's Church through these apostles and their successors. This truth is formally stated *de fide* in *Benedictus Deus*, a constitution of Pope Benedict XII:

> secundum communem Dei ordinationem animae Sanctorum omnium . . . viderunt et vident divinam essentiam visione intuitiva et etiam faciali, nulla mediante creatura in ratione objecti visi se habente, sed divina essentia immediate se nude, clare et aperte eis ostendente quodque sic videntes eadem divina essentia perfruuntur.[3]

Because it is the explicit tradition, both in the Scriptures and in the doctrinal definition of the Church, the Beatific Vision is a certainty quite independent of any conclusions drawn from man's natural desire to see

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[1] I Cor. 13:12.
[2] I John 3:2.
[3] H. Denzinger, *Enchiridion Symbolorum* (Freiburg i. Br.: Herder, 1937), n. 530.

God. We can then, investigate the mode of supernatural knowledge in heaven, abstracting from the appetitive aspects of the question.

The problem to be considered is this: how can man see God, remaining the principle of his own act, yet suffering no violence in his human nature? To know directly the essence of God is clearly beyond the competency of his faculties. St. Thomas notes that God is intelligible; indeed he is intelligible in the ultimate degree. This is precisely the source of the problem. God, whose essence is unreceived by any limiting factor, is infinitely knowable. And therefore, he is excessively knowable in relation to the finite knowing powers of man.[4] If man is to see God, it would seem that a radical change is required in his knowing powers. Can the specifically human faculty of the intellect be so changed without at the same time changing man's nature? It would seem that by reason of the infinite distance between man and God, it is not possible to adequate the two as knowing subject and object known, without a fundamental change in the nature of one of them. It is manifestly absurd to place the change in God. We must examine the change which is required in man.

In the Church's tradition it is evident that the Beatific Vision is effected by God alone. Man's heavenly happiness is a gift from his Creator, obtained through the merits of Christ. Since God is the omnipotent and universal cause, it may seem that our problem is idle and meaningless. God will do what he choses. In answering this objection we must remember St. Thomas' key principle that grace perfects nature and does not destroy it. God, in raising man to supernatural life and vision, does not abrogate the nature which he has first designed and created. Between the two orders, supernatural and natural, there must be harmony and proportion. But in examining the juncture of the two orders, it is necessary to maintain the essential nature and integrity of each. We cannot detract from the full supernaturality and transcendence of that order which is connatural only to God. Nor can we exaggerate the powers of human nature, finding in it the 'seeds' of its own elevation. Within the same act by which the blessed sees the essence of God, we must account for both the transcendence of the divine object and the immanence of the vision in the knowing subject. The Beatific Vision, if it is man's reward, must be man's act.

The final cause of the elevation of man's knowing power to the supernatural order is the face to face vision of God. The certainty of this fact is grounded on the constant tradition of the Scriptures and the Church. In investigating the mode of this elevation we must now consider the material cause, man and his knowing faculty.

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[4] St. Thomas, *Summa theologiae,* I, q. 12, a. 1.

In *Genesis* we read that God declared: "Let us make man to our image and likeness."[5] This divine statement is the principle governing any consideration of man and his relationship to God.[6] It is by reason of his intellectual nature, with its concomitant powers of will and free choice, that man's essence has a proportionate similarity to God.

Man's intellect is a power, the principal and determining power, of his spiritual, subsisting soul. It is thereby independent of the material body in its operation, and is adequate to the knowledge of totally immaterial objects. Because the intellect is a receptive faculty, man is open to intelligible reality. Everything that exists and has its own natural being, can exist in an intentional way in man's intellect. Thus, "in a certain way the soul is all things, because it is naturally constituted to know all things."[7] The knowing substance is not limited to its own form. Knowing is the perfection, *simpliciter simplex,* by which a man receives, and therefore, is united to all other being. It should also be noted that the intellect is not merely a passive recepticle of forms. Knowing is a vital operation of man. Man, therefore, produces his own acts of understanding; he is the efficient principle of his own "conquest of reality."

The object of every intellectual substance is *being,* including all the potential differentiations of being, for whatever is or can be, can also be known.[8] Being, then, is the most universal aspect under which the intellect can know something. Hence, it constitutes its *common* formal object.

This object is attained in different days, according as the individual material objects, the beings, are differentiated, and also depending on the state of the intellectual substance itself. The intellect may be either in a state of union with a material body, or in a state of separation from it. In either case, the formal object, being, is further qualified to be exactly proportionate to the knowing subject in its particular condition. This constitutes the *proper* formal object. It is that which the mind in a particular state, attains first and foremost, and through which it extends itself to know those material objects which fall within the total scope of being, yet beyond or below the range of the proper object.

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[5] Gen. 1:26.

[6] *Sum. theol.,* I-II, prol.

[7] St. Thomas, *In III De anima,* lect. 13.

[8] St. Thomas, *Summa contra gentiles,* II, c. 98; see also *Sum. theol.,* I, q. 79, a. 7.

The proper object of the human intellect in the state of union with the body is the essence of material things. Thus, the proper intelligible object is precisely proportionate to the intellective power, conjoined as it is to a material body. In this state of union, man is not limited to this knowledge of physical essences, but he must go through these species as through media to knowledge of immaterial reality.[9] Man's agent intellect, after the reception of sense images, abstracts the intelligible species from the concrete object, and this form is received into the possible intellect. It is through the species of material things that man is able to extend his grasp of reality even further, to these immaterial objects which he cannot attain directly, but only through analogy.

After death and separation from the body, man's intellect assumes a new mode of being, and therefore, a new mode of operation. This different condition of being requires a different proper object for the intellect. Freed from the body, it need not abstract its species from sense phantasms. As a separated substance, its acts of intellection are primarily directed to its own substance, which also mediates all other knowledge of reality.

Therefore it is evident that the proper object of the intellect does not so much determine what the intellectual substance can know, as it does the manner in which the intellect reaches out to a knowledge of all beings. The proper object of God's knowledge is his own essence, and it is in and through himself that God knows all other beings. The angels also, know themselves in themselves as the proper object of their intellectual power. This mode of knowing differs infinitely from God's, of course, in that the angel's substance is created and finite. And here too, it is the proper object which is the necessary stepping-stone to knowledge of other beings. So that in all intellectual natures, despite differences in the mediating proper object, the common and terminating object is all being.[10]

Because men and angels are not limited to knowledge of their proper objects, they are capable of reaching some knowledge of God, without divine intervention in their natural knowing processes. The angel sees its own substance as the created effect of God. With perfect power of reflexion it sees itself as the image of God. Man too knows God through the mediation of his proper intelligible object, the physical essences of the material universe. Through application of the principle of causality he arrives at a knowledge of God's existence, and through analogies with the things he knows in his own order, he achieves (at the very summit of his powers) some "dark knowledge" of what God is.

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[9] *Sum. theol.*, I, q. 88.
[10] *Ibid.*, I, q. 79, a. 7; *Sum. cont. gent.*, II, c. 98.

This analogical knowledge *about* God is the fulfillment of the human intellect in its natural state, left to its own resources. It is the operation of man's highest power with regard to its highest object. Yet it is imperfect knowledge compared to the face to face vision of God. For essential and direct knowledge of an object is only had when the knowing power directly perceives the essence or species of the object itself. In analogical knowledge of God the closest we get to knowing God is *in* the species of his effects. And since these effects are not adequate images of their cause, we do not really know *what* God is. In a state of natural beatitude it would seem that the knowing subject would be occupied in a contemplation of God *through* the mediating species of his effects, always achieving a better understanding of their cause but never seeing Him directly.[11]

We have seen that an intellectual substance is essentially specified by being as such. This common object becomes somewhat contracted by reason of the state in which the intellect exists and operates, so that it is being in physical essences that is man's proper intellectual object. Yet the intellect retains an obediential capacity to know directly that reality which is beyond its proper object. This potency is passive, i.e., it depends on the efficient causality of another agent for its actuation. It is, moreover, an obediential potency, i.e. the agent must be of a higher order to cause an effect which surpasses the specific nature of the subject.

This seems to be true because it is the intellect's active principle which is affected by its state of existence; the capacity of the possible intellect is only extrinsically affected. It must be supposed then that if the possible intellect is to be exercised to the limits of its capacity, it must be placed in act by an agent superior to its own active power. This obediential potency is in the human intellect, not by reason of its humanity, but as it is intellect.[12]

If it is granted that *ens secundum totam latitudinem suam* is the adequate object of the intellect, then it must also be admitted that God in His very deity can be known by man's intellect, according to its obediential power. For God, as the first being, is contained within the analogue of being as the highest analogate. Therefore, it can be maintained that elevation to the supernatural order of knowledge is consonant with the natural intellectual powers of man.[13]

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[11] *Sum. cont. gent.*, III, c. 49, § 3.

[12] R. Garrigou-Lagrange, *De Revelatione* (Rome: Ferrari, 1929), I, p. 376 ff.

Man's role in the supernatural elevation of his intellect is merely to provide the potential principle. The formal cause of the elevation is the *lumen gloriae*. This is the essential factor which actually accomplishes the elevation.[14]

The *lumen gloriae* may be examined through a comparison to the impressed species which is required in man's natural knowledge. Their functions are analogous. The governing principle in the process of knowledge is that there must be a proportion or similarity between the subject and object. This is necessary because of the intimate union of the two which is the result of knowledge. The proper object of human knowledge is proportioned to the knowing potency through the impressed species. This is an objective likeness of the material, concrete object which raises that object to the higher level of the spiritual intellect of man. In the Beatific Vision there is also an initial disproportion between knowing subject and object known. But in this instance it is the knowing subject which must be raised to the level of the object. Consequently, the likeness or similitude is subjective and it is achieved through elevation rather than abstraction. This subjective similitude which conditions the knowing subject is the *lumen gloriae*. Its function is not so much to render the object intelligible as it is to strengthen man's knowing power so that it may direct its gaze into the "excessive" intelligibility of the divine essence. Just as the impressed species does not change the object known in any essential manner, neither does the *lumen gloriae* essentially change man's nature. It is an accidental perfection superadded to man's nature *per modum habitus*. Thus, the connaturality required in all knowledge is accomplished, not by turning man into a supernatural creature (which is an impossibility), but by elevating him by a created supernatural quality. Thus, the *lumen gloriae* fortifies the natural power of intellection, leaving its nature intact, but at the same time enabling it to exercise itself in a supernatural mode.

It is evident that the efficient cause of man's elevation to the supernatural order is God himself. The end for which it is accomplished and the infused quality by which it is accomplished are purely supernatural and could only be effected by God. We have also seen that man could attain natural happiness through the powers inherent in his own nature. Through his own proper object he can come to knowledge about God and achieve a measure of contemplation that would utterly occupy and satisfy the demands of his nature. Thus, the direct sight of the divine essence, which is connatural only to God, is a purely gratuitous gift from God to man. Man remains man, yet he becomes like God and participates in the divine operation; the reconciliation of these problems is some small indication of the intricate workings of the divine omnipotence and the depths of divine benevolence.

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[13] *Ibid.*, p. 383.

[14] *Sum. theol.*, I, q. 12, a. 5.

John-Baptist Gerlach, O.P.

THE PHILOSOPHY OF SPONTANEOUS GENERATION

THE BELIEF IN SPONTANEOUS GENERATION can be found, in varying degrees, throughout history. Even today surely there are some individuals who would be placed in an uncomfortable position if they were asked to explain the origin of maggots on decaying meat. Among the ancient and mediaeval scientists, the fact of spontaneous generation was accepted practically without hesitation. Aristotle, St. Albert and St. Thomas believed that certain plants and animals were generated from slime or putrefying matter. Examples of this are numerous in their works.

> There is no doubt, then, that they [eels] proceed neither from pairing nor from an egg. Some writers, however, are of the opinion that they generate their kind, because in some eels little worms are found, from which they suppose eels are derived. But this opinion is not founded on fact. Eels are derived from the so-called "earth's guts" that grow spontaneously in mud and in humid ground; in fact, eels have at times been seen to emerge out of such earthworms, and on other occasions have been rendered visible when the earthworms were laid open by either scraping or cutting. Such earthworms are found both in the sea and in rivers, especially where there is decayed matter: in the sea in the places where seaweed abounds, and in rivers and marshes near to the edge; for it is near to the water's edge that sun-heat has its chief power and produces putrefaction.[1]

"Certain animals," St. Albert tells us, "are even generated from putrefying earth, as mice."[2] The writings of St. Thomas contain many similar statements. Certainly for these thinkers there was no doubt about the fact of this phenomenon.

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[1] Aristotle, *History of Animals*, VI, c. 16, tr. D. W. Thompson, Cohen and Drabkin, *A Source Book in Greek Science* (New York: McGraw-Hill, 1948), p. 421.

[2] "quaedam etiam a terra putrefacta accipiunt generationem sicut mures." St. Albert, *De animalibus*, V, tr. I, c. 3, n. 3, ed. Hermann Stadler (Beiträge zur Geschichte der Philosophie des Mittelalters, vol. XV, 1916).

The belief in spontaneous generation, if not understood properly, can be the cause of violent criticism for the philosophical system that supports it. Such modern writers as Oparin declaim mediaeval philosophy for accepting it. While speaking of this belief of the mediaeval philosophers, Oparin cites Lenin as saying "the scholasts and clerics seized upon what was dead in Aristotle and not upon what was alive."[3] He sees in their acceptance of this phenomenon an unforgivable scientific naïveté. He goes on to say, after giving some examples of spontaneous generation from the writings of St. Thomas:

> We have dwelt at some length on the views of Thomas Aquinas because, to this day, his teaching is acknowledged by the Catholic Church as the only true philosophy. Thus, the Western Church has retained through all the centuries the principle of the spontaneous generation of living things according to which living things originate from inanimate matter as a result of animation by a spiritual force.[4]

Today, with the experiments of Redi, Spallanzani, and Pasteur forming part of the history of science, biologists generally accept the law of biogensis which states that there is no known instance of living organisms arising from non-living matter.[5] These experiments are most important when viewed in the light of Aristotelian methodology, since both Aristotle and St. Thomas taught that sense evidence is the ulitmate criterion in natural science. Aristotle, having completed a discussion on the process of generation of bees, made the following statement which is of universal application in scientific methodology:

> This, then, appears to be the state of affairs with regard to the generation of bees, so far as theory can take us, supplemented by what are thought to be the facts about their behaviour, but the facts have not been sufficiently ascertained; and if at any future time they are ascertained, then credence must be given to the direct evidence of the senses more than to theories;—and to theories too provided that the results which they show agree with what is observed.[6]

Also in the *De caelo* Aristotle attacks a certain group of philosophers (the Pythagoreans) for not seeking theories and causes to account for the observed facts, but rather trying to accomodate their observations to their preconceived theories and opinions.[7] St. Thomas commenting on this passage, adds:

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[3] A. I. Oparin, *The Origin of Life on Earth*, tr. Ann Synge (New York: Academic Press, 1957), pp. 9-10.

[4] *Ibid.*, p. 11.

[5] R. P. Phillips, *Modern Thomistic Philosophy* (Westminster, Maryland: Newman, 1948), I, p. 323.

[6] Aristotle, *On the Generation of Animals*, III, c. 10, 760b28-761a10, Loeb Classical Library, tr. A. L. Peck (Cambridge: Harvard, 1953).

> Certainly this procedure is proper in those things which are made by man, which are products of the human intellect: however, in those things which have been made by divine art [i.e., those things which are given in nature and about which natural science is concerned], it is necessary to explain the nature of the works (considerare operum rationes) from the works themselves which are observed.[8]

Today it is a fact of experience that in every case where there was thought to be spontaneous generation a seed was present.

It is interesting to note the suspicion of Theophrastus, the notable pupil and successor of Aristotle at the Lyceum, concerning the problem of spontaneous generation. He often states in his writings that it is possible that there are seeds present in what appeared to be spontaneous generation, though they may be too small to be seen.

> The rains also produce certain decompositions and changes—when the moisture penetrates deeply—and they nourish and increase the resulting growths under the warming and drying influence of the sun. Many believe that animals also come into being in the same way.
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> But if, in truth, the air also supplies seeds, picking them up and carrying them about, as Anaxagoras says, then this fact is more likely to be the explanation.[9]

He goes on to tell us that the possibility of seeds being present is only a guess on his part, in no way verified by experience.

> Let this be given as merely our opinion; more accurate investigation must be made into the subject and the matter of spontaneous generation must be thoroughly inquired into. To sum it up simply: this phenomenon is bound to occur when the earth is thoroughly warmed and when the collected mixture is changed by the sun, as we see also in the case of animals.[10]

So Theophrastus, being true to the principles of methodology given by his master, also had to accept spontaneous generation as a datum of experience. Yet he knew the issue was not closed. Only could Pasteur say "La génération spontanée est une chimère."

Aristotle, St. Albert and St. Thomas were deceived concerning the fact of this phenomenon. But, taking what they thought to be a fact, they explained it according to their philosophical system. How they did this is what we desire to understand. How did they solve the speculative problem of the possibility of abiogenesis as given, for them, in spontaneous generation? As a current author said, "when St. Thomas admits the possibility of spontaneous generation, this is not, we suspect, merely a concession to the science of his time."[11] If we understand precisely what "spontaneous generation" meant for these thinkers, we will be better able to judge this statement. Our procedure will be to determine a suitable definition, then to consider their theory of natural generation, for it is by comparison with natural generation that we will get a clear insight into the problem of spontaneous generation as understood by these ancient and mediaeval scientists. The philosophical discussion will center about the question of adequate efficient causality to produce life from non-living matter. Aristotle, St. Albert, and St. Thomas take almost an identical position, differing in a certain way from St. Augustine.

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[7] Aristotle, *De caelo,* II, c. 13, 293a25-293a30, ed. Ross (Oxford: Clarendon Press, 1930).

[8] "Quod quidem conveniens est in his quae ab homine fiunt, quorum principium est intellectus humanus: in his autem quae arte divina sunt facta, oportet e converso ex ipsis operibus quae videntur, considerare operum rationes. . . ." St. Thomas, *Comm. in libros Aristotelis De caelo et mundo,* II, c. 13, lect. 20 (ed. Leonina, *Opera Omnia,* vol. 3, Romae: Typ. Poly. Vat., 1886).

[9] Theophrastus, *On the Causes of Plants,* I, c. 5, tr. R. E. Dengler (Cohen and Drabkin, *op. cit.),* p. 459.

[10] *Ibid.,* p. 460.

What does "spontaneous generation" mean? The term "generation," in the broadest sense, means the "change from non-being to being in the same subject."[12] John of St. Thomas next tells us that the generation proper to living things has a special definition. He divides this definition into two types of generation, viz., "in the proper sense, and in a wide sense." We are interested in what he calls the "generation of living things, in a wide sense." Concerning this last given definition he says:

> . . . wherefore this definition includes both the univocal generation and the equivocal generation as well: the univocal generation is that which is from another living thing, the equivocal is that which is from a non-living thing, as when an animal is generated by the heaven.[13]

Aristotle tells us, in the *History of Animals,* that spontaneous generation is that which takes place without the male.

> In the case of certain fishes, however, after they have spontaneously generated eggs, these eggs develop into living animals; only that in certain of these cases development is spontaneous, and in others it is not independent of the male.[14]

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[11] R. J. Thompson, "The Unity of the Organism", *Modern Schoolman,* XXIV (1947), 155.

[12] ". . . generatio communissime definitur, transitus seu mutatio de non esse ad esse in subjecto." John of St. Thomas, *Cursus Philosophicus,* Pars 3a, q. 1, a. 1 (Taurini: Marietti, 1933), vol. 2, p. 547.

[13] ". . . unde comprehenditur tam generatio viventium univoca quam aequivoca, tam quae est ab alio vivente, quam quae est a non vivente, sicut cum animal generatur a caelo." *Ibid.*

[14] Aristotle, *History of Animals,* V. c. 1, 539b3-539b5, ed. Richard McKeon, *The Basic Works of Aristotle,* Oxford translation (New York: Random House, 1941).

St. Thomas states that spontaneous generation is that which takes place without seed.

> Those things which are generated by putrefaction are said to arise spontaneously, because they are produced from the earth without seed, by an analogy to the case where someone is said to do something spontaneously because he is not compelled to from without.[15]

These definitions are essentially the same since the male, as Aristotle tells us while he is treating of sexual generation, is the contributor of the principle of movement.[16] But the principle of movement is the seed. Hence the definitions are the same.

That there is no seed in spontaneous generation simply means that there is no particular efficient cause. But an efficient cause can be of another type, viz., universal. A universal efficient cause is one which is able to produce many specifically different effects.[17] Since a universal efficient cause can produce effects which are specifically unlike itself, it is also called "equivocal." This is distinguished from a particular efficient cause which can produce only effects which are specifically like to itself, wherefore it is called "univocal."[18]

In the case of spontaneous generation there is no univocal efficient cause acting, therefore there must be an equivocal efficient cause producing the effect for, according to Aristotelian philosophy, there must be a being in act for the generation of that which previously was only in potency. As Sertillanges says, St. Thomas would have been the last person in the world to believe in generation without a *proper* cause.[19] Here we see the problem to which these thinkers addressed themselves, the question of efficient causality in the context of spontaneous generation. Sertillanges states the problem as

> Whether certain beings, even living beings, could not be born of matter by the sole influence of general activities, without a semen, representing the generative power or vitality of the species.[20]

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[15] ". . . ea quae generantur ex putrefactione quae dicuntur sponte nasci, quia producuntur ex terra sine semine, per illam similitudinem qua dicitur aliquis sponte facere illud, ad quod extrinseco non inducitur." St. Thomas, *In de anima,* II, lect. 7 (ed. Parmae, *Opera Omnia,* vol. 20, 1866).

[16] Aristotle, *On the Generation of Animals,* I, c. 21, 730a27.

[17] J. Gredt, *Elementa Philosophiae Aristotelico-Thomisticae,* ed. 8a (Frib. i. Br.: Herder, 1956), t. 1, n. 756.

[18] A. D. Sertillanges, *Foundations of Thomistic Philosophy* (St. Louis: B. Herder, 1931), p. 175.

[19] *Ibid.*

[20] *Ibid.*, p. 177.

Before proceeding to consider the solution offered to this problem by several of the most eminent thinkers of the past, we must note that this question is set in an entirely different background than the related question of the origin of life as proposed by contemporary materialist philosophers. Contemporary biologists commonly deny the essential distinction between the living and the non-living, hence they find no need to search for an adequate cause for the production of life beyond the level of inanimate matter itself. However, the denial of such a distinction between living and non-living is completely foreign to the teaching of all the more eminent philosophers of the past and none of these, until the time of Descartes, challenged it.

St. Thomas is most explicit on the point of the distinction between these two realms, and this is the teaching of his school today, as evidenced by the thirteenth thesis of the 24 Thomistic theses approved by the Sacred Congregation of Studies, which begins "corporeal beings are divided into two groups, certain are living, certain lack life."[21] In the words of St. Thomas:

> . . . a body is either living or non-living. However it is manifest that a living body is more noble than a non-living body; further a living body does not live in so far as it is a body, because then every body would be living. It is necessary that it lives because of something else, as our body lives because of the soul.[22]

Further he devotes one article of the *Summa* to the question of whether all natural things can be called living. The following passage is an excerpt from this article:

> We are able to ascertain, from those things which are manifestly living, what things are living and which are non-living. Life is manifestly found in animals, as is said in the work "De Vegetabilibus" (Aristotle, in lib. I *De Plantis,* c. 1, in prin.), that life is manifest in animals. Wherefore, by that according to which we say that animals are living, we can distinguish living things from non-living. We say that an animal is living when it has self-motion, and an animal is judged to be living as long as such motion is evident in it; but as soon as an animal does not have any self-motion, but is moved only by another, then the animal is said to be dead due to the lack of life. From this it is evident that those things are properly living which move themselves according to some species of motion; . . . those things

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[21] "Corpora dividuntur bifariam: quaedam sunt viventia, quaedam expertia vitae. . . ." *Acta Apostolicae Sedis,* VI (1914), 385.

[22] ". . . corpus aut est vivum, aut non vivum. Corpus autem vivum, manifestum est quod nobilius corpore non vivo; corpus autem vivum non vivit inquantum est corpus; quia sic omne corpus viveret. Oportet igitur quod vivat per aliquid aliud; sicut corpus nostrum vivit per animam." St. Thomas, *Summa theologiae,* I, q. 3, a. 1 (ed. Parmae, *Opera Omnia,* vol. 1, 1852).

> which by nature do not move themselves to any motion or operation are only able to be called living by analogy.[23]

Hence, for St. Thomas, the living is not only distinct from the non-living, but also more "noble" or higher. Moreover, it seems to be the teaching of St. Thomas that the nature of the living thing is so radically different from that of the non-living, that it would be metaphysically impossible for inanimate matter to act as the principal efficient cause in the production of even the lowest forms of life. Because of this we will see these philosophers looking to a higher cause than innate matter to explain the origin of life in spontaneous generation. We will see their awareness of the heavenly bodies in the generation of all things, especially in the generation of living things. The sun's influence will be most important, as even today is affirmed in the process of photosynthesis. Because of the manifest influence of the heavenly bodies in generation, Aristotle, St. Thomas, and St. Albert will look to the movers of these heavenly bodies, seeking therein a definitely proportionate efficient cause for the production of life.

Having seen what is meant by spontaneous generation and having detailed the problem we are concerned with, we must now consider the theory of natural generation as proposed by these philosophers, concentrating on the efficient cause by which a living thing is brought into being.

Aristotle begins discussing the problem of the agent in natural generation by stating the principle that there must be a being in act to educe a form from a being in potency.

> Whatever is formed either by Nature or by human art, say X, is formed by something that is X in actuality out of something that is X potentially. Now semen, and the principle (passive) it contains, are such that . . . each one of the parts gets formed and acquires Soul. . . . the production of the Logos ["ratio" or guiding principle] is done by the movement which derives from the generating parent, who is in

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[23] "Respondeo dicendum, quod ex his quae manifeste vivunt, accipere possumus quorum sit vivere, et quorum non sit vivere. Vivere autem manifeste animalibus convenit. Dicitur enim in libro de Vegetabilibus (Aristot. in lib. I de Plantis, cap. I, in princ.), quod vita in animalibus manifeste est. Unde secundum illud oportet distinguere viventia a non viventibus, secundum quod animalia dicuntur vivere. Primo autem dicimus animal vivere quando incipit ex se motum habere; et tamdiu judicatur animal vivere, quamdiu talis motus in eo apparet; quando vero jam ex se non habet aliquem motum, sed movetur tantum ab alio, tunc dicitur animal mortuum per defectum vitae. Ex quo patet quod illa proprie sunt viventia quae se ipsa secundum aliquem speciem motus movent; . . . ea vero in quorum natura non est ut se agant ad aliquem motum vel operationem, viventia dici non possunt nisi per aliquam similitudinem." St. Thomas, *Summa theologiae,* I, q. 18, a. 1.

> actuality what the material from which the offspring is formed is potentially.[24]

He goes on to show that semen is the instrument of the soul of the generator in the production of the new being. The form of the new being is educed from the potency of the matter which contains it by the movement the generator imparts to the semen.[25] So, in natural generation, the soul of the generator is an efficient cause, using semen as an instrument.

Concerning the instrumentality of semen, St. Thomas says:

> However, this potency in the seed of the male is not passive, as we say that wood and bricks are a house in potency (for such is the potency in the menstrual fluid of the female), but an active potency, as we say that the form of a house in the mind of the artisan is a house in potency . . . and this potency Avicenna and the Commentator in 7 *Meta.* call the "virtus formativa."[26]

The "virtus formativa" resides in the "spiritus vitalis" which is included in the semen.[27] But the "virtus formativa" is only a means through which a threefold heat acts.

> A threefold heat is joined to the corporeal spirit *[spiritus vitalis]*, namely, the "calor elementaris," which is an instrument resolving, completing and the like; the "calor animae," which is life giving; and the "calor caeli," by whose power the "virtus formativa" moves to a determined species: and by the power of this threefold heat, the "virtus formativa" changes the matter prepared by the female into the substance of the members, in the same manner as the transformation in the body which we call growth . . . and in this way the soul begins to be more and more in act in the seed, while previously it was in potency: so that the being conceived first participates in the operations associated with nutrition, and it is said to have plant life; and so it continues to develop until it attains to the complete likeness of the generator.[28]

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[24] Aristotle, *On the Generation of Animals,* II, c. 1, 734b22 ff.

[25] *Ibid.*

[26] "Haec autem potentia non est passiva in semine maris sicut dicimus ligna et lapides in potentia domus (sic enim est potentia in menstruo mulieris), sed in potentia activa, sicut dicimus formam domus in mente artificis esse potentia domum; . . . et hanc potentiam Avicenna et Commentator in 7 Meta. vocant virtutem formativam." St. Thomas, *Super libros Sententiarum,* II, dist. 18, q. 2, art. 3, sol. (ed. Parmae, *Opera Omnia,* vol. 6, 1856).

[27] *Ibid*

[28] "Illi autem corporali spiritui conjungitur triplex calor: sc. calor elementaris, qui est sicut instrumentum resolvens et consumens et hujusmodi operans; et calor animae, qui est vivificans; et calor caeli, cujus virtute movet ad speciem determinatam: et virtute hujus triplici caloris, virtus formativa convertit materiam a muliere praeparatam in substantiam membrorum per modum quo est transmutatio corporis in augmento . . . secundum hoc anima incipit magis ac magis actu esse in semine, quae prius erat in potentia: ita quod conceptum primo participat opera vitae nutritivae, et tunc dicitur vivere vita plantae; et sic deinceps, donec perveniat ad completam similitudinem generantis." *Ibid.*

For St. Thomas, the "virtus formativa" is the active principle in the natural generation of animals.[29]

Aristotle attributes the power of semen to generate to *pneuma* or, more precisely, to the substance in the *pneuma,* which he refers to as "hot-substance."

> There is present in the semen of every animal and in the foam-like stuff, the so-called "hot-substance" which causes the semen to be generative: this is not, of course, fire but it is the *pneuma* which the semen contains, the "substance in the *pneuma,*" which is analogous to the element of the heavenly bodies, viz., the aither.[30]

"In all *pneuma* soul-heat is present," says Aristotle, "so that, in a way, all things can be said to be full of soul."[31] In further clarification of the nature of *pneuma* Aristotle tells us that it is a "hot-substance" but no ordinary "hot-substance," since *pneuma* is a substance more divine than any of the four elements (earth, air, fire and water) and analogous to the fifth element, the aither, the element of the upper cosmos.[32]

Up to this point we have seen that, in natural generation, *pneuma,* a substance analogous to the element of the upper cosmos, plays an important role. That there is more involved even in natural generation than just the power of the parent is made clear by Aristotle's statement in the *Physics* that "man is begotten by man and by the sun as well."[33] Commenting on this statement, St. Thomas says that "man is generated from matter and by man as by proper agents, and by the sun as by the universal agent of all generable things."[34]

To see something of the significance of this statement we must note that for Aristotle, St. Albert and St. Thomas, the ultimate source of all motion is the Unmoved Mover, which is pure self-thinking thought. Since the actuality of thought is life, we can say that all life comes from God.[35] The Unmoved Mover sets in motion the "primum mobile," i.e., the first sphere, which transmits movement to the inner spheres. The movement we find here in the lower cosmos is due to the motion of the heavenly bodies, especially of the sun.[36] Hence the statement that both man and the sun generate man.

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[29] ". . . in naturali generatione animalium principium activum est virtus formativa, quae est in semine in iis quae ex semine generantur." *Summa theologiae,* I, q. 71, ad 1.

[30] A. L. Peck, *On the Generation of Animals* (of Aristotle), *ed. cit*, p. 582, n. 13.

[31] Aristotle, *On the Generation of Animals,* III, c. 2, 762a19.

[32] A. L. Peck, *op. cit.,* p. lix, n. 45.

[33] Aristotle, *Physics,* II, c. 2, 194b13, ed. R. McKeon, *The Basic Works of Aristotle* (New York: Random House, 1941).

[34] "Sed homo generatur ex materia et ab homine quasi ab agente proprio, et a sole tamquam ab agente universali respectu generabilium." St. Thomas, *In libros Aristotelis Physicorum,* II, c. 2, lect. 4 (ed. Leonina, *Opera Omnia,* vol. 2, 1884).

[35] A. L. Peck, *op. cit.,* p. 568, n. 13.

St. Thomas has much more to say about this statement. In answer to the objection that all natural forms must be created he replies:

> . . . in the seed the "calor seminis" acts as an instrument of the power of the soul, which is in the seed: which, although it is imperfect, nevertheless remains as a certain impression of the perfect soul: for it is in the seed from the soul of the generator, and it (the *calor seminis*) acts also in virtue of the celestial body of which it is a quasi-instrument; and because of this it is not said that the semen generates, but the soul and the sun.[37]

In answer to the objection that the sensitive soul is not caused by the semen, he again refers to the role of the sun in generation:

> . . . and so it is not necessary that this active power [which is in the semen and derived from the soul of the generator] should have any organ in act, but it is seated in the very spirit *[spiritus vitalis]* included in the semen . . . in which spirit there is also a certain heat from the power of the celestial bodies, in virtue of which inferior agents act toward a particular kind of being . . . and because the power of the soul concurs in a spirit of this kind, it is said that man and the sun generate man.[38]

From these passages it is clear that the semen is an instrument of both the soul and the sun in natural generation.

St. Albert, refering to his revision of Aristotle's *Physics*, and, no doubt, to the statement that man is begotten by man and by the sun as well, says "we speak of generation in two ways: man generates man from the material of food—univocal generation; the sun, however, generates equivocally, as we said in the *Physics*."[39]

In relation to this we must note the statement of St. Thomas that "for the generation of perfect animals, many principles are required; for a universal agent does not suffice, but a proper univocal agent is further required."[40] This will be of especial importance as we consider spontaneous generation.

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[36] *Ibid.*

[37] ". . . quod etiam in semine calor seminis agit ut instrumentum virtutis animae, quae est in semine: quae quidem licet imperfecta sit, tamen est impressio quaedam animae perfectae relicta: est enim in semine ab anima generantis, et agit etiam in virtute corporis caelestis cujus est quasi instrumentum; et propter hoc non dicitur quod semen generet, sed quod anima et sol." St. Thomas, *De potentia*, q. 3, a. 8 ad 14 (ed. Parmae, *Opera Omnia*, vol. 8, 1856).

[38] "Et ideo non oportet quod ista vis activa habeat aliquod organum in actu, sed fundatur in ipso spiritu incluso in semine, . . . in quo etiam spiritu est quidam calor ex virtute caelestium corporum, quorum etiam virtute agentia inferiora agunt ad speciem. . . . Et quia in hujusmodi spiritu concurrit virtus animae, dicitur quod homo generat hominem, et sol." *Summa theologiae*, I, q. 118, a. 1 ad 3.

[39] "Generatio autem dicitur duobus modis: homo enim generat hominem ex materia cibi univoce: sol autem generat aequivoce sicut diximus in *Physicis*," St. Albert, *De animalibus*, XVI, tr. 1, c. 8, n. 49 (*ed. cit.*, BGPMA, vol. 16, 1920).

Having seen something of the role of the sun in natural generation, as well as the role of the parent in the use of semen as an instrumental cause, we can now turn to the topic of spontaneous generation, the case of generation without a semen.

The following passage from the works of St. Thomas will lead us into the topic:

> In animals generated by putrefaction, the power of the sun and of the other heavenly bodies takes the place of the "virtus formativa" which is in the semen in the generation of those creatures which are produced from seed. And because the powers of the heavenly bodies are diffused through all inferior bodies; as the Philosopher says [III *De gen. animal.*, c. XI, 762a21] that all things are full with the powers of soul; and so just as animals which are generated from seed are to the female, so these, which are generated without seed, are to the earth; and as those [generated from seed] are to their father, so these [generated without seed] are to the celestial bodies: on account of which a certain philosopher says . . . that the sun is the father of plants, and the earth is the mother.[41]

St. Thomas and Aristotle said that only imperfect animals, i.e., those which lack sight and hearing or, in other words, those which lack distance perceptors, could be generated spontaneously, because fewer things are required for their constitution. For their generation the power of the heavenly bodies alone suffices. However, in the case of perfect animals, as man, the horse, and all others that have the senses of sight and hearing, both semen and the power of the heavenly bodies are necessary. Several passages from the writings of St. Thomas will make this clear.

> In so far as something is imperfect, so fewer things are required for its constitution. Wherefore when animals are generated from putrefaction they must be more imperfect than those generated from seed. In the animals generated by putrefaction the power of the celestial

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[40] "In animalibus autem perfectis plura requiruntur principia; non enim agens universale sufficit, sed requiritur agens proprium univocum." *In De anima,* II, lect. 7.

[41] ". . . in animalibus generatis ex putrefactione virtus solis et aliorum corporum caelestium supplet vicem virtutis formativae quae est in semine in generatione eorum quae ex semine nascuntur. Et quia hujusmodi virtutes corporum caelestium sunt per omnia inferioria corpora diffusae; ideo dicit Philosophus (in 17 lib. *De gen. animal.*), quod omnia plena sunt virtutibus animae; et ideo sicut animalia quae generantur ex semine se habent ad feminam, ita ista se habent ad terram, quae sine semine generantur; et sicut illa se habent ad patrem, ita ista se habent ad corpora caelestia; propter quod dixit quidam philosophus (lib. 15 *De animalibus,* cap. 2), quod sol est pater plantarum, terra vero mater." St. Thomas, *super libros Sententiarum,* III, dist. 8, q. 1, a. 1 ad 7 (ed. Parmae, vol. 7, 1857).

> body alone suffices, which also operates in the seed, although it does not suffice without the power of the soul to produce those animals which are generated by seed: for the power of the celestial body remains in inferior bodies in so far as they are acted on by it, as by a first principle of change.[42]

Again, in the *Summa theologiae,* he states almost in the same words as in his commentary on Aristotle's *De anima,* that a universal agent suffices for the generation of imperfect animals.

> For the generation of imperfect animals a universal agent suffices, which is the "virtus caelestis." . . . But for the generation of perfect animals a universal agent does not suffice, but a proper agent is also required, which is a univocal generator.[43]

From these passages it is evident that only an equivocal or universal agent is required for spontaneous generation, and this agent is the power of the heavenly bodies. The question we must now answer is how do the heavenly bodies possess life? St. Thomas tells us that they are adequate causes to produce this effect because they act in virtue of their movers, which are living substances.

> A celestial body, since it is a moved mover, has the nature of an instrument, which acts in virtue of a principle agent. And so from the power of its mover, which is a living substance, it is able to cause life.[44]

In relation to this he further states that:

> Although the heaven is not similar "in specie" to the imperfect animals generated by putrefaction, nevertheless it is similar in the sense of an effect virtually existing in an active cause.[45]

What is the opinion of Aristotle concerning the nature of the life-giving principle in spontaneous generation? We have a word of caution from one modern commentator concerning this point, who tells us "it is not clear in what sense there is anything in the case of spontaneous generation which is X in actuality comparable to the parent in ordinary generation."[46] Let us consider what the Philosopher himself said:

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[42] ". . . quanto aliquid est imperfectius, tanto ad ejus constitutionem pauciora requiruntur. Unde cum animalia ex putrefactione generata, sint imperfectiora animalibus quae ex semine generantur, in animalibus ex putrefactione generatis sufficit sola virtus caelestis corporis quae etiam in semine operatur, licet non sufficiat sine virtute animae ad producendum animalia ex semine generata: virtus enim caelestis corporis in inferioribus corporibus relinquitur, inquantum ab eo transmutantur, sicut primo alterante." *De pot.,* q. 3, a. 11 ad 12.

[43] ". . . quod ad generationem animalium imperfectorum sufficit agens universale, quod est virtus caelestis. . . . Ad generationem vero animalium perfectorum non sufficit agens universale, sed requiritur agens proprium, quod est generans univocum." *Summa theologiae,* I, q. 45, a. 8 ad 3.

[44] ". . . corpus caeleste, cum sit movens motum, habet rationem instrumenti, quod agit in virute principalis agentis. Et ideo ex virtute sui motoris, qui est substantia vivens, potest causare vitam." *Summa theologiae,* I, q. 70, a. 3 ad 3.

[45] Caelum autem licet non est simile in specie cum hujusmodi animalibus ex putrefactione generatis, est tamen similitudo quantum ad hoc quod effectus in causa activa virtualiter praeexistit." *De pot.,* q. 3, a. 11 ad 12.

> Animals and plants are formed in the earth and in water because in earth, water is present, and in water pneuma is present, and in all pneuma, soul-heat is present.[47]
>
> In the present case [spontaneous generation], however, what are we to describe as holding this sort of position [of the female]? And whence comes the principle that imparts movement, corresponding to the male, and what is it? Now we must apprehend that, even in the case of those animals which generate [naturally], it is the incoming nourishment that is the material out of which the heat residing in the animal produces the residue—the principle of the fetation—by setting it apart and concocting it. Similarly with plants, except that with them and certain of the animals there is no need of the principle of the male over and above that, because they contain in themselves this principle mixed [with the female]; in most animals, however, the residue does need this principle.
>
> Of the one set [of things which generate spontaneously], the nourishment is water and earth; of the other, it is the things that are formed out of these; so that in their case the seasonal heat present in their environment causes to accumulate and to take shape by means of concoction out of sea-water and earth that which in the case of animals the heat present in them produces out of the nourishment. And that portion of the soul-principle which gets enclosed or separated off within the *pneuma* makes a fetation and implants movement to it.[48]

Hence, for Aristotle, in natural sexual generation, the female concocts the "residue" (menstrual fluid) by her heat out of suitable nourishment. In spontaneous generation, the heat of the season, by a like process of concoction, acts on the substance taken from sea-water and earth. In this kind of generation, the portion of the soul-principle that gets enclosed within the *pneuma* assumes the role of the male. But, as said previously while treating of Aristotle's theory of natural generation, *pneuma* is generative because it contains soul-heat. What is this "soul-heat" contained in the *pneuma*? Is it from the celestial bodies?

In an attempt to answer these questions, let us consider a statement made by Aristotle which seems to indicate that matter itself is a sufficient cause to produce life by spontaneous generation.

> The natural things which can be produced spontaneously are those whose matter can be moved even by itself in the way in which the seed usually moves it; those things which do not have such matter cannot be produced except from the parent animals themselves.[49]

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[46] A. L. Peck, *op. cit.*, p. 584.

[47] Aristotle, *On the Generation of Animals*, III, c. 11, 762a18 ff.

[48] *Ibid*, 762a22-762b10 ff.

[49] Aristotle, *Metaphysics*, VII, c. 9, 1034b4-7, ed. R. McKeon, *The Basic Works of Aristotle* (New York: Random House, 1941).

A. L. Peck, commenting on this passage, says that those things which move themselves in the way that the seed usually moves them supply themselves with everything that in the normal way of generation would be supplied by the form of the parent which is already X in actuality.[50] St. Thomas, commenting on the same statement, says:

> Those things whose matter is not able to be moved by itself with the same motion as it is moved by the sperm, cannot come into being except from seeds; as is evident in man and the horse and the other perfect animals.[51]

Aristotle has made a distinction between two kinds of matter: that which can move itself in the way it would ordinarily be moved by seed, and that which cannot, this latter being unable to generate a living creature if there is no seed present. Therefore we can say that in certain matter there is an instrumental active principle that is able to cause the motion which would be caused by the seed in ordinary generation. If we read further in St. Thomas' commentary on the *Metaphysics,* where he is discussing this point, we see that he attributes this force in such matter to the celestial body, which has the power to produce life as previously stated.

> In these things which are generated by putrefaction, even in the matter there is some principle similar to the active power which is in the sperm, from which the soul is caused in such animals. And as the power which is in the sperm is from the complete soul of the animal and from the power of the celestial body, so the power in putrified matter which is generative of an animal is from only the celestial body, in which all generated forms are virtually contained, as in an active principle.[52]

Following the interpretation of St. Thomas, we conclude that the "soul-heat," which Aristotle tells us is contained in *pneuma* and is the cause of the *pneuma* being generative, thus being the cause of life in spontaneous geneartion, is a participation in the power of the celestial bodies. Aristotle himself is not very clear, in the passages we have consulted ,concerning the nature of "soul-heat" and its source, but St. Thomas' interpretation seems satisfactory, certainly explaining Aristotle's distinction between matter which can move itself and that which cannot. We offer the interpretation that the matter which can move itself in such a way as to produce a living thing independent of a seed, is that which is sufficiently disposed so that, under the influence of the heavenly bodies, which act as an equivocal efficient cause, life can be educed from it.

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[50] A. L. Peck, *op. cit.,* p. 585.

[51] "Illa autem quorum materia non potest moveri a se ipsa eo motu quo a spermate movetur, impossibilia sunt fieri aliter quam ex ipsis seminibus; sicut patet de homine et equo et aliis animalibus perfectis." St. Thomas, *In duodecim libros Metaphysicorum Aristotelis expositio,* VII, lect. 8, n. 1454, ed. R. Cathala (Taurini: Marietti, 1950).

[52] "In his vero quae generantur ex putrefactione, etiam est in materia aliquod principium simile virtuti activae quae est in spermate, ex quo causatur anima in talibus animalibus. Et sicuti virtus quae est in spermate, est ab anima completa animalis, et a virtute caelestis corporis, ita virtus quae est in materia putrefacta generativa animalis, est a solo corpore caelesti, in quo sunt virtute omnes formae generatae, sicut in principio activo." *Ibid.,* n. 1457.

However, Aristotle says that substance in the *pneuma* is analogous to aither, the fifth element, and that both the heat of the sun and the heat of animals are able to effect generation, even the heat of animals that is not contained in the semen.

> And this substance [in the *pneuma*] is analogous to the element which belongs to the stars. That is why fire does not generate any animal, and we find no animal taking shape either in fluid or solid substances while they are under the influence of fire; whereas the heat of the sun does effect generation, and so does the heat of animals, and not only the heat of animals which operates through the semen, but also any other natural residue which there may be has within it a principle of life.[53]

But the fact remains that Aristotle says that aither, the element of the the stars, can produce a living creature.[54] In the case of the spontaneous generation of animals from such substances as mud, it seems more in accord with Aristotle's thought to attribute their generation to the power of the celestial bodies than to animal heat, since animals are in no way related to such substances. Also, "residues" are closely associated with animals, examples of residues being such things as menstrual fluid, the "semen" of the male, excrement and so forth. All such things are quite distant from mud and humid ground from which, as Aristotle himself tells us, living beings can be generated under the influence of the sun. From this it seems that the interpretation of St. Thomas is in accord with the mind of Aristotle and we conclude that, for both Aristotle and St. Thomas, the cause of life in creatures which they believed were generated spontaneously is the celestial bodies, acting in virtue of their movers.

Having seen the cause of life in this context according to Aristotle and St. Thomas, we must turn to consider the view of St. Albert. We may rightly expect that he will be in agreement with their position, since he was the source of the Aristotelianism which is so characteristic of the thought of St. Thomas.[55] Let us recall that St. Albert attributed the power to act as an equivocal cause in generation to the sun.[56] He explicitly tells us that the life-giving power acting in spontaneous generation is from the stars.

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[53] Aristotle, *On the Generation of Animals,* II, c. 3, 737a1-5.
[54] *Ibid.,* II, c. 3, 736b30-35; cf. also 737al.

> Those things, however, which, simply speaking, are born from putrefaction, are generated from moist matter rising to the surface, whose external viscous matter is hardened by the coldness of the air into a skin-like membrane, in which the vaporizing heat from the putrefying matter is contained, which heat makes the moist matter contained within the membrane to respire, and respiring, it begins to live: this spirit is a vehicle of life infused into that substance from the stars, whose power it contains.[57]

What is this power of the stars which can cause life? St. Albert, commenting on the *Liber de causis,* explains for us the position of Aristotle.

> The "anima nobilis," according to the Peripatetics, whose doctrine we here wish to explain, saying nothing of our own opinion, but interpreting their opinion in so far as we are able, is not the soul of animals nor of men, but of the orbs, indeed of the celestial orbs: because it is necessary that whatever moves itself has a mover joined to it: however nothing moves itself locally unless by a soul. And so the Peripatetics say that the heavens are moved by a soul, and that each heaven has its own proper soul.[58]

In this passage we see him speaking as if the heavenly bodies were animated, but he is only giving the opinion of the Peripatetics. He rather states that the heavenly spheres are moved by intelligent forms, which are not the "souls" of the spheres.[59] But this point of difference is of little importance for our purposes in the consideration of the efficient cause of life in spontaneous generation, since St. Albert invokes these movers of the heavenly bodies, which are obedient to a higher intelligence, as the active principles of animal reproduction and spontaneous generation.[60] To be precise, St. Albert's position that the intelligences are in the heavenly bodies as "motores" and not as "animae" is identical with the opinion of St. Thomas, both differing from Aristotle who said the heavenly bodies were "animated."

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[55] James A. Weisheipl, *The Development of Physical Theory in the Middle Ages* (New York: Sheed and Ward, 1959), pp. 29-30.

[56] St. Albert, *De animalibus,* XVI, tr. 1, c. 8, n. 49; cf. supra, note 39.

[57] "Illa autem, quae simpliciter ex putrefactione nascuntur, generantur ex humido ad superficiem exalante, cujus viscosum exterius frigiditate aeris duratur in pellem, intra quam calor evaporans ex putrescente continetur, qui spirare facit humidum intra pellem conclusum, qui spiritus est vehiculum vitae infusae illi substantiae a stellis, quarum virtus est in ipso." *Ibid.,* VI, tr. 3, c. 3, n. 123.

[58] "Anima autem nobilis secundum Peripateticos, quorum nos hic explanamus intentionem, nihil de nostro dicentes, sed eorum intentionem prout possumus interpretantes, non est anima animalium vel hominum, sed orbium, sed est orbium etiam caelestium: eo quod necesse est quod omne quod movetur seipso, habeat sibi conjunctum motorem: nihil autem a se localiter movetur nisi anima. Et ideo dicerunt Peripatetici coelos moveri ab anima, et unumquodque coelum habere propriam animam." St. Albert, *De causis et processu universitatis,* II, tr. 1, c. 2, ed. Borgnet (*Opera Omnia,* vol. 8, Paris: Vivès, 1891).

[59] St. Albert, *Problemata Determinata,* q. 2, ed. James A. Weisheipl, "The *Problemata Determinata* Ascribed to Albertus Magnus (1271)," in *Mediaeval Studies,* XXII (1960), 326.

St. Albert says that "every lower motion which is in the matter of generable things is reduced to the motion of the heavens, which is the cause and measure of lower motion by means of (i) the form of the moving intelligence, (ii) the form of the celestial orb, and (iii) the stellar rays."[61] The active natural powers of the elements are instrumental powers acting in virtue of the celestial powers by which these natural powers of the elements can be productive of higher forms. Thus St. Albert explains the generation of living forms from inanimate matter.

Finally, to see how the phenomenon of spontaneous generation was explained quite differently than by Aristotle, St. Thomas, and St. Albert, let us consider how St. Augustine seems to have fitted this phenomenon into his philosophical system.

Oparin cites St. Augustine as saying:

> God as a rule creates wine from water and earth through the mediation of grapes and their juice; however sometimes, as in Cana of Galilee, he can create it directly from water. Thus also, in respect of living things, he may cause them to be born from seeds or to emerge from inanimate matter where invisible spiritual seeds (*occulta semina*) repose.[62]

St. Augustine, beginning with the words of Scripture "He that liveth forever created all things together,"[63] concluded that God created all things in an instant.[64] At the first instant of time God created matter and placed in it the principles or causes, the "rationes seminales," which would, by their active power, cause the unfolding of the richness of creation without the need of any special divine intervention.

The "rationes seminales" are causes, but not efficient causes in the strict sense used by Aristotle. They are not causes in the sense of a being in act capable of educing a form from a being in potency. For Aristotle, St. Thomas, and St. Albert the whole question of spontaneous generation is discussed in terms of potency and act, and whatever is contained in the potency of matter can be educed from it by the action of an efficient cause proportioned to the effect. The "rationes seminales," however, do not educe any form from some matter, but they themselves are the "new" form. They exist in actuality, but *latently,* in matter and, by their own power, governed by Providence, they emerge from the latent state into the fullness of perfection. St. Augustine, further, leaves the way open to God to step in, by His special intervention, to produce effects beyond the causal power of the "rationes seminales."[65]

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[60] St. Albert, *Lib. XI Metaph.*, tr. 1, cc. 6 and 8, ed. Borgnet *(Opera Omnia,* vol. 6, 1890).

[61] *Ibid*, c. 8, *ed. cit.*, p. 594a; cf. *Problemata Determinata,* qq. 7-15 and qq. 34-36.

[62] A. I. Oparin, *op. cit.*, p. 9.

[63] Ecclesiasticus, 18:1.

[64] F. L. Thonnard, *A Short History of Philosophy* (New York: Desclée and Cie, 1955), pp. 255-256.

In the following passage from *De Genesi ad litteram,* we see that both the "rationes seminales" and the Creator can produce effects, and the power of the Creator can produce effects beyond the capability of the "rationes seminales."

> And the elements of this corporeal world have their own definite power and quality, in virtue of which each one is able or unable to do a certain thing, able or unable to become a certain thing. From these powers, as in the first beginning of things, all things which are born, at their proper time, take their rising and their course, and also the ends and disappearances of themselves and of their kind. Wherefore it happens that a bean is not produced from a grain of wheat nor wheat from a bean, nor man from cattle or cattle from man. Over this natural motion and course of things, the power of the Creator has within itself the ability to make something other from these things than is determined by their "rationes seminales." Neverthless, what He has not placed in these things can neither be produced by the "rationes seminales" nor by Him.[66]

The question we must answer is whether the effect of life as given in spontaneous generation is within the causal power of the "rationes seminales" or if it must be attributed to the special intervention of God?

The problem of spontaneous generation is concerned with the possibility of an effect being produced solely by the influence of general activities without semen, representing the generative power of the species. Certainly the above mentioned generation of a bean from another bean is ordinary, univocal generation. But the "rationes seminales" have causal powers greater than such ordinary, univocal causes of generation. According to one author, St. Augustine's teaching concerning the "rationes seminales" means

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[65] *Ibid.,* p. 257.

[66] "Et elementa mundi hujus corporei habent definitam vim qualitatemque suam, quid eumquodque valeat vel non valeat, quid de quo fieri possit vel non possit. Ex his velut primordiis rerum, omnia quae gignuntur, suo tempore quoque exortus processusque sumunt, finesque et decessiones sui cujusque generis. Unde fit ut de grano tritici non nascatur faba, vel de faba triticum, vel de pecore homo, vel de homine pecus. Super hunc autem motum cursumque rerum naturalem, potestas Creatoris habet apud se posse de his omnibus facere aliud, quam eorum quasi rationes seminales habent, non tamen id quod non in eis posuit, de his fieri vel ab ipso possit." St. Augustine, *De Genesi ad litteram,* IX, c. 17, Migne, PL, 34, 406.

> that all the potentialities and causes of all things that were to appear were fixed in the beginning not merely generically, but specifically, in other words, that the "rationes seminales" were determined for all future beginnings. . . . We mean that these powers were there in matter capable of producing the various effects that we now see, and that God commanded, as it were, these powers to produce definitely these facts.[67]

Accordingly, the "rationes seminales" could be considered as an univocal cause, in as much as they only produce a determined species. Yet they differ from the univocal cause in natural generation, which is a living generator, existing in its full perfection, producing another living thing like itself.

Since spontaneous generation is only said of imperfect animals and of those creatures even lower in the scale of living things, it would not take the special intervention of God to produce the effect of life in this context, there being no question of the production of a spiritual soul.[68]

St. Augustine does not look to the movers of the heavenly bodies to find a proportionate cause to produce life, as we found with Aristotle, St. Thomas, and St. Albert, but he conceives of the world as having a marvelous power of causality within itself that continues to produce greater manifestations of the power of the Creator, visible to man in the world about him.

As a conclusion, it will be worthwhile to compare the views of Aristotle, St. Thomas, St. Albert, and St. Augustine on the origin of life in spontaneous generation with the theory of Oparin, who represents the most widely accepted modern opinion on the question of the origin of life.

As mentioned at the beginning of this article, Oparin vehemently attacks the mediaeval thinkers for accepting the notion of spontaneous generation. The precise point which he objects to is that they appealed to some higher, non-material force to explain the arising of life from inanimate matter. Since he is a dialectical materialist, who teaches that nothing exists but matter and from matter all things proceed by the dialectic, he cannot allow this recourse to a non-material force to explain the arising of life. In the words of Engels, "with regard to the origin of life, up to the present, science is only able to say with certainty that it must have arisen as a result of a chemical action."[69] According to this philosophy all new forms are the result of a dialectical leap in nature; they are new qualities produced by the evolution of matter.[70] Hence, Oparin finds no need to search beyond the level of matter to find an adequate cause to produce life. St. Thomas cannot accept this view, since he saw the living as essentially distinct and higher than the non-living. Rather, St. Thomas, with Aristotle and St. Albert, looked to some agent above the level of innate matter, the movers of the celestial bodies and ultimately the Unmoved Mover. St. Augustine also ultimately appeals to God, who is the source of the power of the "rationes seminales." Perhaps this is the most dangerous teaching of dialectical materialism, that they exclude from reality any force beyond matter and therefore deny the existence of the Unmoved Mover. Given their philosophy, "the last vestige of a Creator external to the world is obliterated."[71] Accordingly, it is most fitting that we conclude this article with a criticism of the Marxian philosophy.

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[67] M. J. McKeough, *The Meaning of the Rationes Seminales in St. Augustine* (Wash. D.C., 1926), pp. 54-6; cited by Stanislaus J. Grabowski, in *The All Present God* (St. Louis: B. Herder Book Co., 1952), pp. 242-3.

[68] Charles Hauret, *Beginnings* (Dubuque: The Priory Press, 1955), p. 73.

The Marxian philosophy is based on three laws, viz., the "law of opposites," the "law of negation," and the "law of transformation." If any one of these is shown to be false, the entire edifice built upon them will collapse. For the sake of brevity we will consider only the "law of opposites," this law being most relevant, since, given the "law of opposites," there is no need to call upon any agent external to the world to explain change, and matter alone would be the cause of all that exists. The "law of opposites" means

> Every being is composed of two positive elements which are, by nature, inseparably united but mutually exclusive and opposed to each other, and it is this opposition inherent in each entity which is productive of the motion evident in all things.[72]

For the dialectical materialists this clash of opposites is the cause of all motion. They assert that the source of motion is inherent in the very entity which is changing. But the fact remains that no matter how much these opposites are opposed by nature, if they are absolutely inert and passive elements, they can never act upon one another. Opposites must be endowed with activity before they can cause conflict.

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[69] F. Engels, *Anti-Dühring* (New York: International Publishers, 1935), p. 85; cited by Charles McFadden, *The Philosophy of Communism* (New York: Benziger Bros, Inc., 1939), p. 55.

[70] Charles McFadden, *op. cit.*, p. 54.

[71] F. Engels, *Anti-Dühring*, p. 18; cited by McFadden, *op. cit*, p. 55.

[72] McFadden, *op. cit.*, p. 177.

"Two opposed elements in concrete reality could not, of themselves, produce a conflict any more than a thousand dead Capitalists and a million dead Communists could produce a class war."[73] The "law of opposites" presupposes motion in matter, whereas it claims to explain it.

St. Thomas, on the contrary, points out that any concrete reality in motion must be put in motion by some other cause outside itself.

> It is certain and evident to our senses that some things are in motion. . . . By motion we mean nothing else than the reduction of something from a state of potentiality into a state of actuality. Nothing, however, can be reduced from a state of potentiality into a state of actuality unless by something already in a state of actuality. . . . Therefore, whatever is in motion must be moved by another.[74]

Ultimately this leads to the necessity of positing the existence of the Unmoved Mover, and the dialectical materialist is forced to do just this if he honestly faces the problem of motion. This is shown by St. Thomas in the following argument:

> Whatever is in motion must be put in motion by another. If that by which it is put in motion be itself put in motion, then this also must needs be put in motion by another, and that again by another. This cannot go on to infinity, because then there would be no first mover and, consequently, no other mover—seeing that subsequent movers only move inasmuch as they are put in motion by the first mover. . . . Therefore it is necessary to arrive at a First Mover, put in motion by no other; and this everyone understands to be God.[75]

We hope that this short criticism of the Marxian system is sufficient to convince the reader of the philosophical naïveté of the Marxian view of the world about us.

Certainly the ancient and mediaeval scientists were deceived in their acceptance of spontaneous generation as a fact of experience, but they were seeking to explain all the phenomena presented to them. Without the aid of instruments which we take almost for granted, they could not avoid this deception. But this error does not invalidate their scientific speculation. They attempted to explain this phenomenon according to a principle which they knew to be true (the principle of adequate efficient causality) prior to its application to this particular problem. Further, they might be criticized for their dependence on an antiquated astronomical system, but the truths they have passed down to us do not depend on this system. Whether one looks to God or to agents subordinate to his power to explain the arising of life from inanimate matter is not of the essence of the problem.

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[73] *Ibid.*, p. 180.

[74] "Certum est enim, et sensu constat, aliqua moveri in hoc mundo. . . . movere enim nihil aliud est quam educere aliquid de potentia in actum. De potentia autem non potest aliquid reduci in actum nisi per aliquid ens in actu. . . . Omne quod movetur oportet ab alio moveri." *Summa theologica*, I, q. 2, a. 3.

[75] "Omne quod movetur oportet ab alio moveri. Si ergo id a quo movetur moveatur, oportet et ipsum ab alio moveri, et illud ab alio. Hic autem non est procedere in infinitum; quia sic non esset aliquod primum movens et per consequens nec aliquod aliud movens; quia moventia non movent nisi per hoc quod sunt mota a primo movente; sicut baculus non movet, nisi per hoc quod est motus a manu. Ergo necesse est devenire ad aliquod primum movens, quod a nullo movetur: et hoc omnes intelligunt Deum." *Ibid.*

If one wishes to evaluate the scientific thought of the Middle Ages, he must patiently study the writings of such men as St. Albert and St. Thomas. Certainly they were mere men like ourselves, and thus could err, yet we can learn many truths from them that today are almost forgotten. These men were slaves to truth, not twisting reality to suit their whims, but rather approaching it with humility. Humility is the key to the wine cellar and only clothed with this virtue dare we handle the reality God has created. This is one of the almost forgotten fundamental truths they can teach us.

Felix Stephany, O.P.

SIR ISAAC NEWTON AND HYPOTHESIS

Then ye who now on heavenly nectar fare,
Come celebrate with me in song the name
Of Newton, to the Muses dear; for he
Unlocked the hidden treasuries of Truth:
So richly through his mind had Phoebus cast
The radiance of his own divinity.
Nearer the gods no mortal may approach.[1]

SEVENTEENTH CENTURY ENGLAND produced its share of geniuses, but in the eyes of science, ranking high above the long list of names, was that of Sir Isaac Newton. For scientists, he was the man of the hour, both prophet and savior. His practical application of mathematics to the real world, provided the long sought key to a closed and mysterious universe. For his disciples, Newton's prolific mathematical imagination gave birth to the tool by which the major phenomena of the whole universe of matter could be reduced to a single mathematical law. For the first time he made optics a branch of physics by his demonstration that the theory of light and the theory of matter are cognate and complementary. His treatment of light was so complete that no additions were made for the following two centuries. His laws of motion and gravitation are regarded even today not only as valid principles but unshakeable milestones in the rugged path of the history of science. "Newton enjoyed the remarkable distinction of having become an authority paralleled only by Aristotle to an age characterized through and through by rebellion against authority."[2] Albert Einstein referred to him as the

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[1] Edmund Halley, "Ode Dedicated To Newton," in *Mathematical Principles of Natural Philosophy,* Trans. Andrew Motte. Revised by Florian Cajori (Berkeley: University of California, 1939) p. xv.

[2] Edwin A. Burtt, *The Metaphysical Foundations of Modern Physical Science* (London: Routledge & Kegan Paul, 1932), p. 202-3.

> shining spirt, who pointed out, as none before or after him did, the path of Western thought and research and practical construction . . . not only an inventor of genius in respect of particular guiding methods; he also showed a unique mastery of the empirical material known in his time.[3]

Newton won recognition by the formulation of mathematical-physical laws, but once he had the attention of science, it was his scientific method that spelled his fame. Many of his contemporaries, like Joseph Raphson, but even more his scientific successors for the next two centuries, held his method as the only one for attaining valid scientific results.

More will be said about his method later, but let it suffice here to say that the feature most referred to in his method, one which became the hallmark of the Newtonian system, was his disavowal of hypothesis. In the famous General Scholium added to the *Principia Mathematica* twenty-five years after its first publication, Newton penned the much quoted phrase, "hypotheses non fingo."[4] This brief utterance was to become the slogan of Newtonian physics, the symbol of Newton's achievements. His disciples used it as a hook on which to hang their praise both for Newton himself and his scientific method. W. J. s'Gravesande stated in his *Mathematical Elements of Natural Philosophy*:

> He only who in physics reasons from phenomena, rejecting feigned hypothesis, and pursues this method inviolably to the best of his power, endeavors to follow the steps of Sir Isaac Newton and very justly declares that he is a Newtonian philosopher.[5]

These words, however, were not Newton's only condemnation of hypotheses. His fundamental attitude towards them had always been one of distrust and disdain. In the course of his various controversies, this attitude became definitely hostile. Of the properties of light discovered and proved in 1671, Newton wrote in 1672 to Fr. Gaston Pardies, a Jesuit professor of mathematics in the Parisian College of Clermont, in reply to accusations of hypothesis, that he would rather leave his properties of light rejected "as vain and empty speculation than acknowledge them even as an hypothesis."[6] In reply to criticisms made by Robert Hooke, Newton explained in 1672 how Hook's hypothesis of the wave motion of light in the ether has some possibilities but falls down in some other considerations. At the end of this reply Newton refers to Hook's hypothesis of ethereal pulsations causing light saying that, "Whatever be the advantages or disadvantages of this hypothesis, I hope I may be excused from taking it up, since I do not think it needful to explicate my doctrine by any hypothesis at all." Further on Newton says, "You see, therefore, how much it is beside the business in hand to dispute about hypothesis."[7]

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[3] Henry R. Burke, "Sir Isaac Newton's Formal Conception of Scientific Method," *The New Scholasticism*, X (1936), 98.

[4] Isaac Newton, *Mathematical Principles of Natural Philosophy*, Trans. A. Motte, p. 547.

[5] Burke, *op. cit.*, p. 95.

[6] *Ibid.*, p. 107.

In reply to further objections by Pardies, Newton wrote:

> If any one offers conjectures about the truth of things from the mere possibility of hypothesis, I do not see how any thing certain can be determined in any science, for it is always possible to contrive hypotheses, one after the other, which are found rich in new tribulations. Wherefore, I judged that one should abstain from considering hypotheses as from a fallacious argument.[8]

Newton wrote to Christian Huygens in 1673, again in defense of his theory of light, that "to examine how colors may be explained hypothetically is beside my purpose."[9]

The years between 1672 and 1676 were years of conflict and controversy for Newton. It was during this time that most of his correspondence which we possess today was written. He was accused on all sides of hypothesizing, and, of course, he had to defend himself. But Newton loathed all debates and controversy so much that he became ever more cautious of hypothesis. Consequently, the older he became, the more adamant was his position, the more unequivocal his condemnation of hypothesis. In his *Opticks*, published in 1704, he wrote, "My design in this book is not to explain the properties of light by hypothesis but to propose and prove them by reason and experiment."[10] And finally in 1713, in the General Scholium, Newton emphatically declared, "I frame no hypothesis; for whatever is not deduced from the phenomena is to be called an hypothesis; and hypothesis whether metaphysical or physical, whether of occult qualities or mechanical, have no place in experimental philosophy."[11]

Such was the Newton whom his disciples knew, a man of fact, opposed to the slighest speculation or supposition. But this was not the real Isaac Newton. Anyone familiar with his works cannot help but discover that the master himself frequently delved in the luxury of hypotheses. At the young age of 24 he framed the hypothesis stating that gravity reached the moon and posited its variation inversely as the square of the distance.[12] In a communication written to the Royal Society in 1675 Newton stated, "I had formerly proposed never to write any hypothesis of light and colors fearing it might be a means to engage me in vain disputes."[13] But in this very same letter he proceeded to elaborate on the refraction and reflection of light, involving corpuscles of different sizes, causing in their flight compressions and rarefactions of the ether at a refracting surface. This was certainly an hypothesis and one which is of interest to twentieth century physicists as having considerable resemblance to the modern theory of wave mechanics.[14] In the *Opticks* Newton could not avoid hypothesis, but an effort was made to exclude the more fanciful of them from the main body of the work. The parts which seemed overly speculative and imaginative or which represented investigations not fully completed, he placed at the back of the book under the name of "queries." In these Newton allowed himself full freedom of speech.[15]

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[7] Isaac Newton, "Letter to Pardies, June 10, 1672," in *The Correspondence of Isaac Newton*, ed. H. W. Turnbull, (Cambridge: University Press, 1959) I, p. 169.

[8] Florian Cajori, "An Historical and Explanatory Appendix," in Newton's *Mathematical Principles, ed. cit.*, p. 673.

[9] *Ibid.*, p. 674.

[10] Isaac Newton, *Opticks* (New York: Dover, 1952), p. 1. Based on the 4th edition, London, 1730.

[11] Newton, *Mathematical Principles*, p. 547.

To friends like Robert Boyle, he felt free to disclose his inner most thoughts. Newton's letter to Boyle in 1678 on the cause of gravitation is evidence of this openness. "And first I suppose that there is diffused through all space an ethereal substance, capable of contraction and dilation, strongly elastic and in a word much like air in all respects but far more subtle. . . ."[16] This statement was written about eight years before the publication of the *Principia* on the very topic which in the *Principia* led to the declaration, "hypotheses non fingo." In this letter, however, Newton at least cautioned, "my notions about things of this kind are so indigested that I am not well satisfied myself with them."

In actual fact, Newton delved more in the use of hypotheses as he grew older, even though his very condemnations of them became more emphatic and unequivocal. There seems to be a confrontation between his theory and practice on this matter. Different authors have chosen sides and praised or condemned Newton accordingly. But as might be expected, there are good reasons for Newton's actions. And as will be shown, the arguments in Newton's behalf are not simply concocted to avoid the embarassment of his disciples but rather are reasons which Newton himself consciously had. But before we consider the different senses of hypothesis for Newton and his reasons for their use and disuse, it will be helpful and interesting to first see how Aristotle spoke of hypothesis.

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[12] Cajori, *op. cit.*, p. 671.

[13] *Ibid.*, p. 674.

[14] *Ibid.*

[15] *Ibid.*, p. 676.

[16] Newton, "Letter to Boyle, February 28, 1678," in *The Correspondence*, II, p. 288.

In the second chapter of Book I of the *Posterior Analytics,* Aristotle treated the principles of the syllogism, and it was in this context that he spoke of hypothesis. He led up to it by explaining the thesis.

> I call an immediate basic truth of syllogism a thesis when, though it is not susceptible of proof by the teacher, yet ignorance of it does not constitute a total bar to progress on the part of the pupil. . . . If a thesis assumes one part or the other of an enunciation, i.e., asserts either the existence or non-existence of a subject, it is a hypothesis; if it does not so assert, it is a definition. Definition is a thesis or a laying something down, since the arithmetician lays it down that to be a unit is to be quantitatively indivisible; but it is not a hypothesis, for to define what a unit is is not the same as to affirm its existence.[17]

So Aristotle opposed hypothesis to definition. Hypothesis is a statement, an *enuntiatio.* It is the expression of a judgment while a definition is only the expression of a simple apprehension, neither asserting nor denying the existence of anything. The arithmetician can define the unit as that which is quantitatively indivisible, but by this definition he does not affirm the existence or non-existence of the unit.

Aristotle also opposed hypothesis to an axiom or dignity, which is a basic truth of syllogism "which the pupil must know if he is to learn anything whatever."[18] He called these "dignities" because they are very special. Strictly speaking Aristotle reserved axiom for the principle of contradiction, being is not non-being, but more frequently he included the principle of the whole and the part. Axiom is used in an even broader sense to indicate those principles which every one has to know, even a kindergarten pupil; such are the difference between self and non-self, the one and the many, and others. But the distinguishing mark of the axiom is its necessity; it is a necessary, self-grounded fact required for all progress in learning.

Now, there are also two kinds of hypotheses, the demonstrative and the dialectical. The former renders certitude through a proper reason while the latter yields only probability. The degree of probability of the dialectical hypothesis varies according to the strength of the arguments.

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[17] Aristotle, "Posterior Analytics," in *The Basic Works of Aristotle,* ed. Richard McKeon (New York: Random House, 1941), 72a15-24.

[18] *Ibid.,* 72a18.

The certitude achieved in demonstrative hypotheses can be mathematical, physical or moral. Mathematical hypotheses have greater certitude when considered as abstracted from the contigency of matter and the mobility of physical things, e.g., if there is a triangle, the sum of its angles is 180 degrees. But mathematical hypotheses not abstracted from matter but rather founded in matter as Newton‘s inverse square law of gravitation have only physical certitude. Physical certitude, however, is not to be underestimated; it is considered below mathematical only because of the contingency of matter in the particular case.

Let us now return to a consideration of Newton's understanding and use of hypothesis and the reasons for his condemnatory statements. An examination of the various passages in Newton's writings relating to the use of hypothesis discloses his attitude in this matter. He gives the general definition, "whatever is not deduced from the phenomena is to be called an hypothesis."[19] Within this general definition there are two kinds of hypotheses, the fundamental supposition or hypothesis simply and the plausible consequence or query. It is the former that Newton unconditionally disavowed as playing no part in science in so far as it is a body of facts developed from only a few experiments. Hypotheses in the first sense are explanations based on assumed causes unverified by sufficient experimentation. Hypothesis in the sense of query or tentative and plausible explanation, Newton not only tolerated but frequently employed. Although these, unlike mere speculative suppositions, have some initial probability, the more they are lacking in experimental verification the more Newton desired to lay them aside. The bent of his mind in this respect is revealed in his letter to Robert Boyle in 1678 in which he conjectures about the cause of gravity. He first supposes diffusion through all places of an ethereal substance capable of contraction by the graduated subtility of the ether. "If," he says, there is "any degree of probability" in these conjectures, this is all he aims at.[20]

Newton had no objections to the query which though hypothetical served an explanatory and suggestive purpose. After establishing the properties of things by experiments, he thought it permissable and indeed helpful to proceed "slowly to hypothesis for the explanation of them."[21]

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[19] Newton, *Mathematical Principles*, p. 547.

[20] E. W. Strong, "Hypothesis Non Fingo," in *Men and the Moments in the History of Science*, ed. Herbert M. Evans (Seattle: University of Washington, 1959), p. 172.

[21] Burke, *op. cit.*, p. 105.

In a letter already quoted to Fr. Pardies, Newton stated,

> For the best and safest method of philosophizing seems to be first, diligently to investigate the properties of things and establish them by experiment, and then to seek hypotheses to explain them. For hypothses ought to be fitted merely to explain the properties of things and not attempt to predetermine them except in so far as they can be an aid to experiments.[22]

For Newton, organizing experimental data into a theory by using hypotheses for illustrative purposes was legitimate, but caution was emphasized lest the hypothetical be taken as factual and demonstrated. This function of hypothesis, as his own words indicate, is closely related to its suggestive role by which leading questions are framed about matter crucial to the verification of the theory, which questions themselves are to be settled by further experimentation. Sixteen queries were appended to the first edition of the *Opticks* in 1704, to which Newton added seven more in the Latin edition in 1706, and eight more in the second English edition in 1718. Newton realized that these were not definitive or demonstrated conclusions. In reference to the first sixteen he wrote:

> When I made the foregoing observations, I designed to repeat most of them with more care and exactness, . . . but I was then interrupted, and cannot now think of taking these things into further consideration. And since I have not finished this part of my design, I shall conclude with proposing only some queries in order to a farther search to be made by others.[23]

After the publication of the *Principia,* Newton became involved in politics and the court and, consequently, had little time or concern for science. The fact that in the last two editions of his *Opticks,* the section of queries was expanded seems to indicate that Newton still realized that since he had some ideas but lacked the time and experiments to check them, they should be classified as queries. These last queries are less founded on experiments than those in the first edition, and frequently Newton's opponents accused him of unfounded hypothesizing in them. As pointed out previously, Newton himself would probably have agreed in this particular case, except he thought his statements at least sufficiently supported by experiments to merit their placement among the queries.

For Newton, then, the true function of hypothesis is suggestive rather than dogmatic. Such are the queries in the *Opticks.* These serve to direct inquiry into new lines of investigation as well as offer a tentative explanation of the data already compiled.

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[22] Newton, "Letter to Pardies, June 10, 1672," in *The Correspondence,* I, p. 169.

[23] Newton, *Opticks,* p. 338.

But what then of Newton's frequent emphatic and seemingly unequivocal denunciations of hypothesis? It is clear from what has been said that his polemic against hypotheses is not directed against every use of them. To understand his sweeping condemnations it will be helpful first to see a few of the abuses of his age. At that time many were accustomed to argue for the truth of a theory as follows. There are only a certain number of hypotheses that can possibly explain a given set of phenomena. Now, it may be possible somehow to show that every one of these hypotheses is false but with one exception; this exception must, therefore, be the true explanation.[24] Newton considered such an argument fallacious for when can we be absolutely sure that all the possibilities have been enumerated? "I cannot think it effectual for determining truth, to examine the several ways by which the phenomena may be explained, unless where there can be a perfect enumeration of all these ways."[25] He also objected because of the negative and indirect aspect of the argument.

> The proper method for inquiring after the properties of things is to induce them from experiments. And I told you that the theory which I propounded was evinced to me, not by inferring, it is thus, because it is not otherwise; that, not by deducing it only from a confutation of contrary suppositions, but by deriving it from experiments concluding positively and directly.[26]

Another abuse of hypothesis at that time was that employed by men like the Cartesians, who having reached their physics by a priori construction, refused to recognize the validity of conclusions contrary to their system, even though experimentally verified.[27] This was utter folly in Newton's mind; natural science for him, as for Aristotle, was to start with experience and also to end in experimental verification.

Now while these two abuses of hypotheses may form the general reasons for Newton's vigorous denunciations of hypothesis, for he certainly wanted to avoid all accusations of such abuses, let us consider some of the more pertinent reasons for his statements on hypothesis.

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[24] Ralph M. Blake, Curt J. Ducasse, and Edward H. Madden, *Theories of Scientific Method: The Renaissance Through the Nineteenth Century* (Seattle: University of Washington, 1960), p. 126.

[25] Newton, "Letter to Oldenburg, July 6, 1672," *The Correspondence*, I, p. 209.

[26] *Ibid.*

[27] Blake, *op. cit.*, pp. 127-8.

Firstly, he realized the inevitable tendency of hypothesis to become transformed insensibly into dogmas. Even if the man proposing the hypothesis was able for himself to resist this tendency, his readers would be only too likely to misinterpret them. They would be easily led to suppose that certain hypotheses which in fact were only tentative suggestions having a limited degree of probability, constituted fundamental presuppositions of his system. As often happens in the history of science, the pupils and admirers of a great man misinterpret his words and even replace them with unequivocal assertions. Newton feared this and guarded against it by his denunciations of hypothesis, which were most frequent in connection with the public statments of his conclusions, and especially in reference to those difficult subjects, the nature of gravitation and the composition of light and ether.[28] In his private correspondence and individual habit of thought, he used and tolerated hypothesis but in a reluctant fashion. In the letter already cited to Fr. Pardies he wrote, "For my own part, I have so little fancy to things of this nature that had not your encouragement moved me to it, I should never, I think, have thus far set pen to paper about them."[29] Even with an understanding listener, Newton was averse to the kind of hypothesizing in which he had indulged on this occasion.

The second reason for Newton's denunciations of hypothesis was that the inclusion of such questionable material led in practice to endless and fruitless controversies. In December, 1675, he wrote to the Royal Society:

> I had formerly purposed never to write any hypothesis of light and colors, fearing it might be a means to engage me in vain disputes; but I hope a declared resolution to answer nothing that looks like a controversy, unless possibly at my own time upon some by-occasion, may defend me from that fear.[30]

He saw that often the same experimental fact could be explained by different hypotheses, hence the futility of arguing about them in heated discussion. But besides this, Newton despised controversy and debate; it is a known fact that he loathed them so much that he had others answer his correspondence for him on many occasions.

Newton's final reason was that such speculations, however legitimate and helpful from the investigative point of view, form no real part of positive science, i.e., that limited body of knowledge deduced from experience and carefully verified in experimentation. Although he admitted private speculation had its place, and suppositions might offer a clue to the truth, and fanciful illustrations and explanations were necessary for minds incapable of praising true scientific methods and results, they were all hypotheses and not to be included in the realm of science.

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[28] *Ibid.*, pp. 128-9.
[29] Strong, *loc. cit.*
[30] Cajori, *op. cit.*, p. 674.

These three, then, were the main reasons why he was so vigorous in his public condemnations of hypothesis: they readily develop into dogmas, lead to endless controversy and make no positive addition to science. The fact that he used hypotheses cannot be denied but that he was weary of their use, carefully noting their defects and dangerous consequences is even more important.

Before we pass on to a discussion of loyalty to these cautions both by Newton himself and his disciples, let us briefly see how his idea of hypothesis fits into Aristotle's scheme. It is rather easy to see that Newton, as well as all the moderns, use hypothesis in only one of the Aristotelian senses, namely, the dialectical hypothesis. For the men of the seventeenth century as for the men of today, hypothesis meant only a supposition, rendering not certitude but only various degrees of probability according as it is more or less verified by experimentation. Hypothesis can be a very helpful tool in discovery and prediction but also a very hazardous one in achieving truth.

Granted that Newton consciously and cautiously used hypothesis he has further been accused of employing them as an integral part of his theory. The three most famous examples are opinions on the corporiety of light, the ether, and the theory of a gravitational force. A close examination of Newton's remarks regarding these matters reveals that he recognized their hypothetical or limited character and did not pretend to pass them off as demonstrated and final. With regard to the nature of light, he by no means refrained entirely from hypothetical speculation, but he did attempt to keep clear the distinction between such suggestions and his exact experimental results. In answer to Robert Hooke's accusations he wrote:

> It is true, that from my theory I argue the corporiety of light, but I do it without any absolute positiveness, as the word "perhaps" indicated, and make at most but a very plausible consequence of the doctrine, and not a fundamental supposition.[31]

Concerning the ether Newton wrote in the last paragraph of the General Scholium:

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[31] Burtt, *op. cit.*, p. 212.

> And now we might add something concerning a certain more subtle spirit which pervades and lies hid in all gross bodies; by the force and action of which spirit the particles of bodies attract one another at near distances and cohere, if contiguous. . . . But these are things that cannot be explained in few words, nor are we furnished with that sufficiency of experiments which is required to an accurate determination and demonstration.[32]

With regard to the gravitational force, Newton made it clear that when he spoke of "forces" and "powers" he was using them only as conveniences of expression. His real intention was simply to discover by analysis the mathematical relationships that are exemplified in the phenomena and not the causes upon which these depend. In the *Principia* he said, "I design to give only a mathematical notion of these forces without considering their physical causes and seats."[33] Further on he said:

> I likewise call attractions and impulsions, in the same sense, accelerative and motive; and use the words attraction, impulse or propensity of any sort toward a center, promiscuously, and indifferently one for another, considering those forces not physically but mathematically: Wherefore, the reader is not to imagine, that, by those words, I anywhere take upon me to define the kind, or the manner of any action, the causes or the physical reasons thereof, or that I attribute forces, in a true and physical sense, to certain centers.[34]

Fr. Augustine Wallace, O.P. writes that the more one studies Newton, the more one becomes convinced that he used the attraction theory not only as a convenient mathematical device for deriving his laws and equations of motion, but that he was inclined to accept the opinion that there is an inherent power in the bodies themselves that cause them to gravitate.[35] It cannot be denied that Newton leaned heavily to the theory of ether and gravitational force, but he was, nevertheless, conscious of their distinction from demonstrated facts. His inclinations to hypothesis indicate that he himself was to a certain extent a victim of the times. Like most of the men of the seventeenth and eighteenth centuries, he accepted the Copernican doctrine which was then only an hypothesis and was to remain such for another century until Foucault and Bessel.

The mathematical description of phenomena was already beginning to show its effects on Newton's philosophy of nature as it did on his contemporaries, his disciples and followers. Newton did not regard his laws of phenomena as genuine efficient causes. They do not exercise a real efficient causality but are mathematical measures. He placed a wider gap between the descriptive, mathematical laws of motion and the agents operative in nature than Galileo would have allowed. The physical causes are agents postulated to account for phenomena that resist reduction to mechanical laws and to explain the conformity of actual motions to the mechanical laws themselves. His explanations of phenomena were based on his claim to be able to know true and sufficent causes. He can never be said to have questioned the principle of causality or to have thought its validity only provisionary. For Newton there was absolutely no a priori certainty that the world is through and through mathematical; it is what it is; so far as exact mathematical laws can be discovered in and abstracted from it, well and good. In marked contrast to Galileo and Descartes, Newton claimed a distinct difference between mathematical truths and physical truths. Mathematics must be continually modelled on experience; and wherever he permitted himself lengthy deductions from principles, he zealously insisted on the purely abstract character of the results until they became physically verified. Newton was thus the common heir of the two important and fruitful movements in the preceding development of science, the empirical and experimental as well as the deductive and mathematical. And if it were possible wholly to separate the two aspects of his method, it would have to be said that his ultimate criteria was more empirical than mathematical.[36]

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[32] Newton, *Mathematical Principles,* p. 547.

[33] *Ibid.,* p. 5.

[34] *Ibid.,* p. 6.

[35] W. A. Wallace, "Newtonian Antinomies Against the Prima Via," *The Thomist,* XIX (1956), 160.

It is extremely difficult to formulate Newton's precise notion of science and its purpose. It would be convenient and indeed helpful if he had given us a definition of science or a treatise on his method, but such is not the case. We have only a handful of general and often vague statements which have to be laboriously interpreted and supplemented by a study of his biography. One of the most curious and exasperating features of this whole scientific movement is that none of its representatives appears to have known with clarity just what he was doing or how he was doing it. In scientific discovery and formulation Newton was a marvelous genius; as a philosopher and student of the theory of scientific method, he was uncritical, sketchy, inconsistent and even second-rate. There is no doubt, however, that Newton thought himself to have made a most remarkable methodological discovery despite the fact that he was unable to state his method in its full generality. He always referred to method as he himself saw it and never mentioned another's view except in criticism.

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[36] Burtt, *op. cit.*, p. 208.

Science for Newton was natural philosophy, and whenever he is quoted as renouncing the uselessness of philosophy, he is referring only to the idle speculations which were frequently put forth under the name of philosophy. It is also not accurate to say that whatever Newton accomplished or the matter with which he worked is identical with what he considered to be the extent of science. Newton busied himself with only one step or part in science; this is a point frequently overlooked by many of his zealous disciples. Newton's science studied not only the apparent motions; the universe for him was not a mathematical machine to be explained only by mathematical laws; measurement was not the end of his science. For him, it was definitely within the competence of science to discover the real physical processes in nature causing the mathematical laws. He regarded their discovery as the ultimate objective of scientific inquiry so seriously that he insisted that the investigation of causes be conducted as rigorously as that of the laws themselves.[37] Although the knowledge of causes is very difficult to attain, this is the primary concern of science. Science was to be valued because it brought men to a knowledge of God, the first cause. "Whereas the main business of natural philosophy is to argue from phenomena without feigning hypotheses and to deduce causes from effects, till we come to the very first cause, which certainly is not mechanical,"[38] and further on he adds, "and though every true step made in this philosophy brings us not immediately to the knowledge of the first cause, yet it brings us nearer to it, and on that account is to be highly valued."

It is evident that Newton did not identify laws and causes. To assert, as is sometimes done, that for him science was merely descriptive, is to misunderstand his intention. In the opening paragraph of "A Scheme for Establishing the Royal Society," found by Brewster (Newton's chief biographer) among Newton's papers in the Portsmouth collection, Newton distinguished between the establishment of the laws of phenomena formulated from observation and experiment, and the discovery of causes.

> Natural philosophy consists in discovering the frame and operation of nature and reducing them as far as may be to general rules or laws—establishing these rules by observations and experiments and thence deducing the causes and effects of things.[39]

Determination of the laws of phenomena should precede inquiry into their causes. "For we must learn from the phenomena of nature what bodies attract one another and what are the laws and properties of the attraction, before we inquire the cause by which the attraction is performed." (We can see here how Newton from his mathematical considerations is inclined to the position of a physical gravitational force.) "And although the causes of phenomena be not yet discovered, the accurate formulation of the laws of phenomena or their properties is a valuable and important step in scientific method."[40]

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[37] A. C. Crombie, *Medieval and Modern Science* (Garden City: Doubleday, 1959), II, p. 322.

[38] Newton, *Opticks*, p. 369.

[39] Burke, *op. cit.*, p. 99.

Because Newton himself did very little immediate work on the discovery and explanation of causes and because he frequently referred to certain explanations of causes by his contemporaries and predecessors as hypotheses, many of Newton's followers believed that the formulation of laws was as far as science could go. Although the consideration above gives Newton's true position, it is not difficult to see why his successors thought as they did. The spirit of the times was mechanism; the mathematical explanation of the universe by Galileo and Descartes had no little influence on the intellects of science. Nature was conceived as a unique, inexorable, mathematical machine and, consequently, can be explained adequately by mathematics. After all, Newton himself stated in his preface to the *Principia* that, "All the difficulty of philosophy seems to consist in this—from the phenomena of motions to investigate the forces of nature, and then from these forces to demonstrate the other phenomena."[41] In this statement Newton revealed the precise field of his work; it is the phenomena of motions, but for him science does not stop at that for it is to continue to the discovery of the physical forces from which in turn demonstrations are to be drawn. Commenting on Definition VIII in the *Principia*, he points out the limitations of his endeavors, "For I here designed to give only a mathematical notion of these forces, without considering their physical causes and seats."[42] In the introduction to the third book he expresses the same intention, "In the preceding books, I have laid down principles of philosophy, principles not philosophical but mathematical."[43] Again, in the "System of the World" he stated his scientific purpose; that is:

> . . . only to trace out the quantity and properties of this force [gravitational] from the phenomena and to apply what we discover in some simple cases as principles by which in a mathematical way, we may estimate the effects thereof in more involved cases. . . . We said, in a mathematical way to avoid all questions about the nature or quality

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[40] Newton, *Opticks*, p. 376.
[41] Newton, "Preface to the First Edition," *Mathematical Principles*, p. xvii.
[42] Newton, *Mathematical Principles*, p. 5.
[43] *Ibid.*, p. 397.

of this force which we would not be understood to determine by any hypothesis.[44]

There should be little doubt then that Newton saw the job of science to discover physical causes though he himself limited his own investigations to mathematical considerations of measurement. But much confusion has often been felt with regard to Newton's true position in this matter. A careful study can scarcely fail to disclose the real state of his mind. The mathematical and deductive form with which he invested his works undoubtedly belies the true spirit of his method and is only too likely to mislead the reader into supposing that his theory of science is substantially one with that of Descartes. Nothing could really be further from the truth. In the *Opticks* Newton found the mathematical form in which the work is cast so unsuitable that he was obliged to fit into his series of deductions sets of experiments that supply the necessary premises of the demonstrations that follow. Demonstrations merely mathematical are not essentially necessary to the subject, and, in fact, another form could actually be clearer to most readers; he himself found it natural to adopt another style of exposition. If this, then, is the case, why did he persist in throwing his work into the rather misleading form of mathematics?

Newton himself gave the answer. He found by bitter experience, namely, through controversies, that to present his conclusions merely as a result of experimental investigation did not suffice to produce conviction of their truth. Only by casting his arguments in a severely deductive form could he hope to carry with him his more reluctant readers, influenced by Descartes and Galileo. In other words, the mathematical mode of exposition was not for Newton a definitive form insuring a grasp of absolute fact. It was rather a means of persuading those whom dogmatic prejudice had rendered incredulous, by the use of a language which they found clearer than that of the facts themselves.[45] In book I of the *Principia* he wrote, "But these propositions are to be considered as purely mathematical; and therefore, laying aside all physical considerations, I make use of a familiar way of speaking, to make myself the more easily understood by a mathematical reader."[46]

But Newton had another reason in applying the quantitative method to causal considerations. He wanted to point the way towards the goal of the whole experimental school of natural philosophy: the union of explanatory theory and predictive laws in a single theoretical system. Thus, having solved by means of his laws of motion and of gravitation the problem of the dynamics of macroscopic bodies on earth and in the heavens, he wrote in the preface to the first edition of the *Principia,* "I wish we could derive the rest of the phenomena of nature by the same kind of reasoning from mechanical principles."[47] Newton hoped that by his first steps of observation of phenomena and formulation of laws he might contribute to the advance of science through their use as predictive norms as well as to aid in the discovery of physical causes. For his contemporaries, more so than for himself, technological progress was the primary concern. Reducing the phenomena to mathematical language and theorizing with the mathematics was an excellent way of prediction. Newton, however, did not regard scientific laws as only predicting devices. They were written in the phenomena and had to be deduced by appropriate mathematical and experimental analysis.

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[44] *Ibid.*, p. 550.
[45] Blake, *op. cit.*, p. 119.
[46] Wallace, *op. cit.*, p. 161.

In the sense that he was searching for true causal explanations, Newton had the same objective as Aristotle and all his intellectual descendants. But the Aristotelian natures offered explanations divorced from immediately predictive laws, and it was this divorce that had occasioned the whole discussion between prediction and explanation since the thirteenth century and had led to the replacement of Aristotelian physics by mathematical and mechanical philosophy. Newton, echoing Galileo, wrote of the Aristotelian natures in the thirty-first query of the *Opticks*:

> Such occult qualities put a stop to the improvement of natural philosophy and therefore of late years have been rejected. To tell us that every species of things is endowed with an occult specified quality by which it acts and produces its manifest effects, is to tell us nothing; but to derive two or three general principles of motion from phenomena and afterward to tell us how the properties and actions of all corporeal things follow from those manifest principles would be a very great step in philosophy, though the causes of those principles were not yet discovered; and therefore, I scruple not to propose the principles of motion mentioned, they being of very general extent and leave their causes to be found out.[48]

Newton was losing appreciation for speculative knowledge of physical causes. He was one of the last hopes of Aristotelian natural science for while realizing the discovery of physical causes to be the goal of physics, he busied himself with mathematical measurement. The discovery and definition of physical causes are difficult to attain and not easy to conceive whereas mathematical abstractions fit the mind with a unique clarity and satisfaction. By emphasizing the measurement of phenomena, Newton was unconsciously widening the gap between "ancient" and "modern" science, contributing to the break that developed into the skepticism of Hume and the agnosticism of Kant. Although he underestimated the speculative value of physical natures, he at least admitted their existence. But by his concern for measuring the appearances, he not only helped to bring on the denial of the necessary connection between the natures and their properties but the flat denial of the natures themselves. One only has to see the progression of skepticism that followed Newton, highlighted by Berkeley and Hume, to see the consequences of the denial of natures.

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[47] Newton, "Preface to the First Edition," *Mathematical Principles,* p. xviii.
[48] Newton, *Opticks,* p. 401-2.

To sum up Newton's idea of science, we might say that he realized that science is in search of physical causes. He himself, however, chose to limit his endeavors to a great extent to the easier task of measuring the phenomena. He cast his work in mathematical language both because its clarity fascinated and satisfied his mind and those of his readers and because he hoped to show how applied mathematics could be a fruitful guide in prediction. By his emphasis on the mathematical aspects, Newton was unconsciously losing his naturalistic view of reality and paving the way to the disappearance of physics as the science of natures, independent of calculation and means of prediction. By this emphasis he fell in line with the mathematical movement begun as early as the thirteenth century by Robert Grosseteste and Roger Bacon.

Newton's exhortations of caution with regard to the use of hypothesis were highly respected by his disciples, but yet they blindly accepted his and others hypotheses as demonstrated. He hoped in vain that his successors would appreciate the fundamental distinction between hypothesis and proven physical causes. The enthusiasm excited by the theory of gravitation, that of the tides, that of sound and colors was an essentially dogmatic one. Pupils and admirers misunderstood the words of their master and categorically pushed his hypotheses to the limit. They believed that the *Principia* in its methods and in its results had introduced into physics for the first time an absolute certainty equal to that of algebra or arithmetic. They unquestionably accepted the position of a gravitational force as demonstrated. Laplace, Newton's great successor, thought mechanical laws wholly sufficient to explain the physical phenomena of the solar system, a conclusion that Newton himself would never have accepted.

Amazed at the success in predicting the details of many macroscopic phenomena, Newton's successors saw the physico-mathematical technique for the powerful tool that it is and then forgot that it is only a tool. Not possessing themselves the traditional foundation in which Newton himself was grounded, they saw too much in his results. They assumed his mathematical principles as the total explanation of physical reality and were content to stop where he had begun.[49]

> Having slipped into the error of mathematicism and not appreciating the methodological use of mathematics in physical science, their illusions of a facile explanation of the entire gamut of physical experience were quickly dashed to the ground. Later generations began anew. But the pendulum did not swing to center; its momentum carried it to the other extreme. The philosophers of the new physics still failed to grasp the importance of a generalized physical science which could give true and certain knowledge of the universe; they claimed now that nothing could be certain or absolute. They were content to settle for a provisional explanation of reality; hypothetical constructions and mathematical models were the ultimate they were willing to concede.[50]

Einstein, for example, was able to advance the theory of relativity because he acted on the principle that "the object of physical science is to save the appearances by mathematical abstractions postulated for no other purpose than to save the appearances."[51] He had little hope of knowing the reality behind his equations. He has said that the fundamental principles cannot be abstracted from sensory experience but they are "free inventions of the human intellects."[52] Einstein is today's symbol for great progress in science as well as for the skeptical doubt about our ability ever to reach any definitive answers. It would be good for scientists today to look upon Newton as he saw himself and wished himself to be seen. They could learn two most valuable points from a consideration of their father. Firstly, Newton can teach them the possibility and important place of a naturalistic view of reality proposed through the physical causes as the primary objective of natural science; secondly, he can guide them both by his warnings and his own mistakes to realize that hypothesis and mathematics are only means which must be employed with caution in order to maintain a wholesome and sane understanding of nature.

Melchior Dahm, O.P.

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[49] Wallace, *op. cit.*, p. 191.

[50] W. A. Wallace, "St. Thomas Aquinas, Galileo, and Einstein," *The Thomist*, XXIV (1961), 10.

[51] *Ibid.*

[52] *Ibid.*

THE BOOK OF COMMON PRAYER: ITS DEVELOPMENT

HENRY VIII BEQUEATHED, ON HIS DEATH, a Church which was Catholic in doctrine and royal in government. The Primacy of the Pope had been denied and in its stead was established the Royal Supremacy. The "ancient, catholick doctrine," with the exception of Petrine Supremacy, was retained in the *Ecclesia Anglicana* of Henry VIII.

Before the break with Rome, the liturgy of the Church in England had been basically the Roman rite with certain Gallican and Saxon elements. The Canon of the Mass, the point of primary importance, was verbatim the Canon of the Roman Mass.[1] There were several 'Uses,' those of Sarum, Lincoln and Bangor being the most important. The differences between them were not as great, nor confusion so distracting, as Cranmer was later to allege in his Preface to the Prayer Book.

Henry had made few changes in the litgury. Certain 'images' which were liable to 'superstitious uses' were destroyed; the number of lights on the altars was reduced. A major innovation was undertaken in 1543 with the mandate that one chapter of the New Testament be read in English each Sunday. The last major change under Henry was the introduction of the English Litany, composed by Archbishop Cranmer.

These changes, in comparison with those of the following reign, are quite minor. But their importance and significance lay in the principle which was now established: the public expression of worship, the liturgy, was open to change by the will of the King. Thus the way was prepared for the decisive changes to be made in the liturgy and doctrines of the Church in England during the next reign.

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[1] Paul R. Rust, *The First of the Puritans and the Book of Common Prayer* (Milwaukee: Bruce, 1949), p. 4-5.

Little Edward was crowned and anointed King, in February 1547, according to the old ritual. But his Primate was a man of Protestant views and he was now free to impose them upon the English Church.

The first Parliament of Edward's reign passed an Act for the reception of Communion under both species. Included in the Act were provisions for checking abuses and insults to the Eucharist which had increased alarmingly since Henry's death. The Act was to end the practice of the priest communicating himself alone. It did not, significantly, mention the 'Mass,' calling it instead "the Supper and Table of the Lord, the Communion and partaking of the Body and Blood of Christ."[2]

This, as it turned out, was the wedge which was to open the way to far-reaching changes. The Communion *Order*, which the Act provided, contained nothing heretical; yet its publication served notice on the Catholic-minded that yet more tremendous 'reforms' were contemplated. The *Order* was to be inserted into the Mass in place of the old Communion. The prospect for further change was clearly implied in the *Order* and in the Royal Proclamation which formed its Preface. The rubrics of the *Order* declared that there was to be no "varying" in any rite or ceremony of the Mass "until other order shall be provided." The Proclamation drew attention to this rubric and expressed the hope that "we may be encouraged from time to time further to travail for the reformation and setting forth of such godly orders as may be most to God's glory . . . and for the advancement of true religion."[3]

The other part of the Act took note of the attacks on the Eucharist contained in a flood of books, pamphlets, plays and sermons, all directed against the doctrines of the Real Presence and the sacrificial character of the Mass. Though Parliament professed great concern over these acts, it provided that a period of almost six months should transpire before sanctions against blasphemers of the Sacrament were to take effect.

Paradoxically, though the Act was bound up with the defense of the Sacrament, the Catholic elements in Parliament strongly opposed it. Even the desire to defend their most sacred beliefs from attacks of the 'Reformers' could not blind the Catholic party to the designs of the government in making this change in the liturgy.[4] That they were justified in this position is shown by the fact that the Act was hailed later by a Protestant historian as "the greatest stroke struck against the Popery and for the throwing out of the Mass."[5]

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[2] John A. Strype, *Ecclesiastical Memorials* (Oxford: Clarendon Press, 1824), p. 96-7.

[3] Parker Society, *The Two Liturgies of King Edward VI* (Cambridge: Parker Society, 1894), p. 35.

[4] F. Gasquet and E. Bishop, *Edward VI and the Book of Common Prayer* (London: Hodges, 1890), p. 41.

Despite the provisions of the Act against blasphemers, from now until the publication of the first Prayer Book, a steady stream of writings issued forth to vilify the Mass and the Eucharist. The Council had the right to license preachers; by silencing the Catholic-minded preachers and allowing the 'Reformers' full liberty for their propaganda, Somerset and Cranmer were preparing the way for the full introduction of Protestantism. While pamphlets attacking the Mass were openly printed by Council-licensed presses, the tracts of Bishops Gardiner and Tunstall had to be secretly printed abroad and slipped into the country. In one instance, town authorities arrested a preacher who bitterly attacked the Mass, but he appealed to Somerset, the Lord Protector, and was released and allowed to continue his attacks.[6]

Through 1548, despite the clear words of the law, innovations in the Divine service were made, obviously with at least the tacit approval of the Council. Mass, in St. Paul's, London, was said in English; the anniversary Requiem Mass for Henry VIII was celebrated, in May, 1548, in English and in a shortened form. The Royal Chapel was the home of many of these innovations: Compline was first chanted there in English, followed soon by Mass, Matins and Vespers. It was obvious that a decisive break with the old traditions, rites and dogmas was in preparation.[7]

Sometime in the winter of 1547-48, Cranmer drafted a questionnaire to be sent to all the Bishops concerning "some abuses of the Mass." Cranmer's own answers are revealing. He declared that the "oblation and sacrifice of Christ in the Mass is not so called, because Christ indeed is there offered and sacrificed by the priest and people (for that was done but once by Himself upon the cross); but it is a memory and representation of that very sacrifice and immolation."[8]

In the autumn of 1548, probably in October, the Bishops were summoned by Somerset to come to some understanding about the Prayer Book which had been composed by Cranmer, Ridley and Latimer.[9] At a meeting, the Bishops discussed the Book primarily on the grounds of the doctrines it taught or implied: the ritual aspects were not taken up at this time. It appears that they disagreed and came to no conclusion, though all of them, with the exception of Bishop Day of Chichester, signed the Book with the understanding that this action did not bind them to any assent to the doctrines implied in it. The synod then dispersed.[10]

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[5] Strype, *op. cit.*, X, p. 133.

[6] Gasquet and Bishop, *op. cit.*, p. 42.

[7] Rust, *op. cit.*, p. 69.

[8] Parker Society, *Miscellaneous Writings and Letters of Cranmer* (Cambridge: Parker Society, 1896), p. 69.

[9] Parker Society, *Original Letters Relative to the English Reformation* (Cambridge: Parker Society, 1894), I, p. 642.

The Bishops objected to the treatment of the Eucharist and centered their exceptions on the question of the *adoration* of the Sacrament. There was clear recognition that this was no mere matter of formula but implied a denial of the Catholic doctrine of the Real Presence. The Bishops were assured that there was opportunity for revision which would bring the disputed point closer to ancient practices. But such revisions were never made.[11]

On December 14, 1548, the Book was introduced and read in the House of Lords. The debate that followed was conducted almost exclusively by the Bishops, after an opening statement by Lord Somerset. With Bishop Gardiner now in the Tower, the leader of the Catholic 'party' was Bishop Tunstall of Durham. Cranmer, in the debates, revealed his radical theological views, views which delighted the foreign Reformers in his entourage. Bishop Thirlby of Westminster, despite allegations by the government that he had agreed to the Book, maintained that he had signed the Book "only in disputation" and that he never believed in the doctrines it contained. Somerset was angered at this revelation of the chicanery practiced on the Bishops who had signed the Book that autumn. Thirlby objected to the abolition of the Elevation and the Adoration of the Host. He declared that when the Bishops had signed the book a few months before the word "oblation" was in it; now it was omitted.[12]

Cranmer stated his views on the Eucharist and they were tinged with Zwinglianism: "I believe that Christ is eaten with the heart. . . . Eating with the mouth giveth nothing to man, nor the body being in the bread."[13]

The discussion was closed on December 19, 1548 and on the same day the Prayer Book was presented to the House of Commons. The 'Bill for Religion with Penalty for Same' passed the Lords on January 15, 1549. Ten bishops voted for the Bill, eight against it. Counting proxies and absentee bishops, the English Episcopate divided: thirteen for the Book, ten against.[14] It was a victory for Cranmer and Somerset. But the closeness of the vote among Bishops so infested with Erastian doctrines of the Supremacy of the State indicated that Catholic doctrines and practices were tenaciously held. The Bill passed Commons on January 21, 1549, and received the Royal Assent on March 14. On June 9, 1549, the Book of Common Prayer came into force.

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[10] Gasquet and Bishop, *op. cit.*, p. 178.
[11] *Ibid.*, p. 178-79.
[12] *Ibid.*, p. 165.
[13] *Ibid.*, p. 169-70.

Corpus Christi, the great feast of the Eucharist, fell that year on June 20, and that day was a perfect illustration of the strife and diversity into which this 'Act for Uniformity' had plunged the country. Some places in London kept the feast "as a holy-day and many kept none, but did work openly; and in some churches, services, and in some none, such was the division."[15]

In the West Country, the introduction of the Book caused an explosion. Devon and Cornwall rose in arms against the new service and demanded a return to the old rites. The rebels embodied their demands in Fifteen Articles which they sent to the Council, calling the new service "like a Christmas game" and asking for "our old service . . . in Latin as it was before." Cranmer replied to them, insisting that the new service contained nothing but "the eternal word of God" and was a true and reformed liturgy. The allusion to his Communion Service as a 'game' particularly stung the Primate and he rejoined that their souls must surely be in a parlous state.[16]

By July, 1549, only a month after the Book had come into use, the Council sent special letters to the Bishops, pressing them to use the new service. It was, the letter complained, not being as regularly or as widely used as it should be.[17] In December, another letter from the Council again urged the use of the Book. It denied the rumors that had swept England that since Somerset had been removed from his post of Lord Protector, the old Mass and services would return. This, the Council said, was untrue and dangerous. As a consequence, all missals, antiphonals and other liturgical books were to be turned over to the Bishops at once.[18]

Somerset, while still in power that summer of 1549, acknowledged that in most parts of England there had been trouble when the Prayer

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[14] *Ibid.*, p. 172.
[15] Wriothsley, *Grey Friars Chronicle* (London: Camden Society, 1877), p. 58.
[16] Parker Society, *Miscellaneous Writings of Cranmer,* p. 179-83.
[17] Strype, *Ecclesiastical Memorials,* II, p. 329.
[18] *Ibid.*, p. 323-4.

Book was introduced. Riots against enclosure shifted to protests at the new rites.[19] Cranmer wrote in August, 1549, that his countrymen were "everywhere in rebellion."[20] The presence of a force of foreign mercenaries was, at this moment, the salvation of the Reformers. Italian and German troops were rushed to protect London and to repress the rebellion. The protest was crushed.[21]

Controversy continues to swirl about the Prayer Book of 1549: the 'First' Prayer Book. Pradoxically, its author, Archbishop Cranmer, regarded it as a definite innovation and a death-blow to the Mass and the Catholic doctrine of the Real Presence, while later High Church Angelicans have demanded a return to it because of its 'Catholic' orientation.

The principal part of the Book, and the one that will receive most of our attention, was that containing "the Communion Service, or Mass," as it was still termed. For this Communion Service, the Book allowed either the use of "vestments," meaning the old chasuble, etc., or else the cope, heretofore never a Mass vestment.

Up to the Canon, the new Service followed the structure of the Catholic Mass with an Introit, Collect, Epistle and Gospel. The Epistles coincide closely with those used in the Roman Rite while the Gospels do so only occasionally. Following the Preface and the *Sanctus*, prayers connected with the 'Words of Institution' followed. The prayers in the Book are not a translation of the Roman Canon; they contain phrases and traces of it, but in several important respects they differ. The question was hotly debated as to whether they contained references to a Eucharistic Sacrifice. Cranmer contended later that they did not; Bishop Gardiner, on the other hand, appealed to them against other writings of Cranmer as showing Catholic doctrine. The Catholic-minded party chose to construe this service to be a Mass.[22]

The Service continued with the recitation of the Lord's Praper; the *Agnus Dei* was omitted. The Order of Communion, issued in 1548, was inserted into the Prayer Book at this point; a Post-Communion was recited and the Service closed with a Prayer and Blessing.[23]

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[19] Nicholas Pocock, *Troubles Connected with the Prayer Book of 1549* (Westminster: Camden Society, 1884), p. 1.

[20] Parker Society, *Original Letters. . . .*, I, p. 350.

[21] Richard Dixon, *History of the Church of England from the Abolition of the Roman Jurisdiction* (Oxford: Clarendon Press, 1902), II, p. 49.

[22] Parker Society, *The Two Liturgies of Edward VI*, p. 172.

[23] D. Atchley, Essays in Ceremonial (London: Library of Liturgiology, 1904), p. 251.

The Book contained extremely few rubrics. This lack seems to have been premeditated. 'Reform'-minded pastors cut the Service as much as possible, making it similar to the services of Zurich and Geneva. Other pastors, the great majority, celebrated it with the rubrics of the old Mass.[24]

Although the Prayer Book of 1549 shows traces of many influences—Roman Rite, Mozarabic Rite of Spain and faint hints of the Eastern liturgies—its model is obviously Luther's scheme for reforming the Mass, proposed in 1530. An examination of the 'Nuremberg Mass' reveals its very close resemblance to the Edwardine Communion Service. In both, the structure of the old Mass was retained; the use of the old vestments was allowed. In both, the pre-Canon portions of the Mass are kept and translated into the vernacular, but the Canon itself is drastically cut and altered. There is the same effort, in both, to do away with anything suggesitve of sacrifice.[25] A point of cardinal importance is that the 'Words of Institution' in both the 'Nuremberg Mass' and Cranmer's Communion Service are, apart from minor variations in rendering, substantially one and the same.[26]

Besides the Communion Service, the Prayer Book contained other liturgical changes. The Hours of the *Breviary* were reduced to two: Matins and Evensong. Changes were made in the Administration of Baptism; the form for the administration of Confirmation seemed to change it from a Sacrament to a mere pious ceremony of the renewal of Baptismal vows.[27]

The Preface to the Prayer Book explained Cranmer's position. Nothing devised or established by men ever escaped corruption. The divine service was now in need of reform since "the Godly and decent order" of the ancient fathers had been broken. The new Order, in the language of the people, was better than the old because it contained only "the pure word of God . . . or that grounded upon it." The Book was shorter, easier to understand and it required no other book save the Bible.[28]

It is obvious, however, that Cranmer was not going to be content with this Book; for him it was to be but a means of gradual transition for the English Church from Catholicism to pure Calvinism. Calvin and other Continental Reformers had been asked to examine the Book and to give their opinions on it. Calvin, in his reply, condemned certain of its prayers and ceremonies, but approved the principle of reform.[29]

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[24] L. Pullan, *The History of the Book of Common Prayer* (London: Longmans, Green, 1900), p. 101.

[25] Gasquet and Bishop, *op. cit.*, p. 220-23.

[26] *Ibid.*, p. 443.

[27] Vernon Staley (ed.), *The First Prayer Book of Edward VI* (London: 1903), p. 62.

[28] *Ibid.*, Preface.

Letters from Cranmer to Reformers on the Continent and also letters from the foreign divines he had invited to England, all tell of the gradual, but planned steps being taken to render the Church of England into a truly Protestant organization. Bucer wrote to friends in Strasbourg that the use of vestments, candles, etc., and the retention of certain prayers had to be "retained for a time" lest the people be dissatisfied by too sudden a change in religion. The usuages of the Prayer Book were "temporary," until the English should feel "inclined to adopt your rites respecting the administration of the sacraments. . . ."[30]

Despite the concessions made to the Catholics on paper, the Government seemed determined to harry them out of existence. Bishop Ridley of London, one of the most radical Reformers, issued injunctions to destroy all the altars in his diocese.[31] Cranmer, who had invited Bucer and Peter Martyr, two prominent Continental Reformers, to England, requested them to draw up a critique of the Prayer Book. Bucer's reply, the *Censura,* made a list of recommendations, all of which were embodied in the revision of the Prayer Book which Cranmer now contemplated.

This revision was demanded by "the preciser sort at home and by Calvin abroad." By September, 1551, it was completed, but its publication was delayed until the Council inserted a new rubric, the so-called 'Black Rubric,' into the the book. Parliament thereupon ratified the new Prayer Book in January, 1552.

This 'Second' Prayer Book represented an open breach between Catholic doctrines and those now held by the Church of England. The belief in the Real Presence, implied or left doubtful in the previous Book, was now explicitly denied. The Angelican Church was now brought down to the level of the Genevan churches on the Continent. "The differences between the Church of 1529 and that of 1549 was slight compared with that of 1549 and that of 1552."[32] The second Act of Uniformity which was to impose the Book upon the Church was approved by Parliament on April 14, 1552.

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[29] Atchley, *op. cit.,* p. 211-14.

[30] Parker Society, *Original Letters. . . .,* I, 266; II, 535-6.

[31] Frere and Kennedy, *Visitation Articles and Injunctions,* II, 191.

[32] A. F. Pollard, *England Under the Protector Somerset* (London: Paul, Trench and Trubner, 1900), p. 261.

In the 'Second' Prayer Book, the Introit is done away with altogether; the *Kyrie* is altered and inserted into the reading of the Decalogue. The *Gloria* is moved to the end of the service. Though the Epistle and the Gospel remain, all prayer or allusion to eucharistic sacrifice is expunged. The *Sanctus* was altered: the words, "Blessed is He who comes in the Name of the Lord" are omitted. Of the Canon of 1549, little more than the words of Institution remain. The Communion at once follows upon the words of Institution and the service ends with a blessing. Of the sequence and structure of the old Mass, nothing now remains.

The rubrics were designed to do away with Catholic practices and to underscore the rejection of the doctrine of the Real Presence. The practice of kneeling at the reception of Communion was the occasion of much bitter debate in the Council. While Cranmer himself defended the practice, the most radical Reformers inveighed against the rubric, alleging that it seemed an admission of the Real Presence. The dispute provided the opportunity for one of the rare displays of authority by the young King Edward. He supported the radicals and ordered that a note be inserted declaring that the *custom* of kneeling at Communion should not be misinterpreted as paying any adoration to the Bread and Wine, since they remained mere bread and wine even after their consecration. This 'Black Rubric' marked the triumph of the extremist Calvinistic party. The word "Mass" was stricken from the Book; the use of the alb, vestments and even cope was forbidden. Henceforth, bishops were to wear a rochet, and the priest a surplice during the Communion service.[33]

The 'Second' Prayer Book was a decisive break with the Henrician Church. On the ruins of Henry's anti-papal Catholicism was now erected an Erastian Calvinism, presided over by a pious young King, ruled by a cynical and amoral Regent and supported by the nobles and capitalists of the new order, enriched by the plunder of Church lands. But young Edward barely saw the Book in use. He died on July 6, 1553 and his half-sister, the princess Mary, came to the throne, despite the clumsy *coup* attempted by Warwick, Cranmer and others of the Council. Mary was a fervent Catholic, and the work of Cranmer and the Reformers was in danger.

For the first few months of her reign, Mary allowed the Book of Common Prayer to continue in use along with the restored Roman and

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[33] Gasquet and Bishop, *op. cit.*, p. 277-307.

Sarum rites. On August 18, 1553, she issued a Proclamation directed against controversy in religion and calling for a halt to the religious debates and name-calling.[34] However, within a few months, the First Act of Repeal rescinded the Act of Uniformity and restored, on and after December 20, 1553, the liturgical practices as they had been in the last year of the reign of Henry VIII. All other uses were forbidden. In effect, this meant the restoration of the favored Sarum rite and the English Litany of Cranmer.[35]

Tagged as "Cranmer's schismatical book," the Book of Common Prayer was now condemned and burned along with heritical editions of the Bible. A Royal Proclamation of June, 1554, revived the statute of Henry IV against heresy and heretical books; among the condemned authors was Thomas Cranmer. It was forbidden to print, in either English or Latin, the Edwardine Book of Common Prayer.[36]

Better advised in the early part of her reign than after her unfortunate marriage with Philip of Spain, Mary had allowed the foreign Reformers and their disciples to leave the kingdom. In Frankfurt, one party of exiles fought successfully to keep the 'Second' Prayer Book, despite the efforts of another faction who wished to adopt the Swiss type of worship.[37] But the exiles on the Continent did fall more and more under the influence of Calvinism. Calvin himself ridiculed the Confirmation service, the use of the Sign of the Cross in Baptism and some of the prayers. But, in general, his opinion was that it contained "many tolerable absurdities." His criticisms were to inspire the later party of Puritan divines in their resistance to anything that faintly smacked of Popery.[38]

Queen Mary died on November 17, 1558, the most admirable and least successful of the Tudors. Her successor was her half-sister, Elizabeth, the daughter of that union which was the occasion for the break with Rome. While Mary lived, Elizabeth had professed deep devotion to the Catholic faith. Now that she was Queen, both Protestants and Catholics waited anxiously for her religious policy.

Within a month the Queen proclaimed that the Gospels and Epistles were to be read in English and that the English Litany, which had fallen into disuse under Mary, was to be revived.[39] In December, 1558, the Queen requested the Bishop of Carlisle not to elevate the Host during Mass in the Royal Chapel. When he did so, the Queen stalked out.[40]

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[34] R. Steele (ed.), *Tudor and Stuart Proclamations: 1485-1714* (Oxford: University Press, 1910), #424.

[35] S. Ollard, *A Dictionary of English Church History* (London: Mowbray and Co., 1912), p. 131.

[36] R. Steele, *Tudor and Stuart Proclamations*, n. 460.

[37] Ollard, *op. cit.*, p. 131.

[38] L. Pullan, *The History of the Book of Common Prayer* (London: Longmans, Green, 1900), p. 112.

On March 22, 1559, the Statute of Edward VI on Communion in both kinds was revived.[41] By Easter of that year, the Mass was being sung in the Royal Chapel according to the usages of the First Prayer Book.[42] Elizabeth's new Archbishop of Canterbury, Matthew Parker, a Calvinist, was appointed to revise the Liturgy. The Queen desired to see the 'First' Prayer Book reintroduced, but Parker, and other members of his commission insisted upon the Second, and told the Queen it would be impossible to revive the 1549 Book. Elizabeth agreed, but insisted on certain modifications designed to render the Book more agreeable to the Catholics.[43]

The English clergy too late saw the fatal drift away from Catholicism. In Convocation, on January 24, 1559, they issued a formal protest against any alteration in the existing forms of worship and declared that the Church alone should determine doctrine and ecclesiastical discipline.[44] The House of Commons replied to this challenge with a bill annexing Supremacy to the Crown. A third Act for Uniformity in Religion passed the Commons in April, 1559 and re-established the "Second" Prayer Book, with a few minor changes. In the House of Lords, the Bill encountered some opposition. Feckenham, the last Abbot to sit in the House, reviewed the efforts of Cranmer to destroy the Mass.[45] But his efforts were fruitless and the Bill passed. The 'Elizabethan Settlement' was imposed upon the Church of England.

The Elizabethan Prayer Book made certain concessions to the Catholic-minded. The virulent petition against the Pope in the Litany was struck out; the 'Black Rubric' was omitted; the vestments for use in the service were those in use in the second year of Edward VI's reign. But, in total effect, it was the Prayer Book of 1552 with the rubrics of the Book of 1549: Catholics had won concessions in ceremonies, the Protestants won in the field of doctrine.[46]

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[39] R. Steele, *Tudor and Stuart Proclamations,* n. 497.

[40] Pullan, *op. cit.,* p. 113.

[41] Steele, *Tudor and Stuart Proclamations,* n. 502.

[42] Pullan, *op. cit.,* p. 113.

[43] *Ibid.,* p. 114.

[44] *Ibid.,* p. 115.

[45] J. Somers, *A Collection of Scarce and Valuable Tracts* (London: Cadell and Davis, 1809), I, p. 81.

[46] Parker Society, *Elizabethan Liturgies* (Cambridge: Parker Society, 1844).

Pope Pius V, in his Apostolic Brief deposing Elizabeth, brought against her the charges of doing away with the Mass, the Divine Office and other Catholic rites. "She has ordered the use of books containing manifest heresy throughout the realm and the observance of her subjects of impious mysteries and ordinances according to the rule of Calvin. . . ."[47]

The *Book of Common Prayer* became the vehicle for Protestant changes in the Church of England. It replaced the old rites of Catholicism and gradually turned from the ancient models towards the Calvinistic and Zwinglian types of worship used on the Continent. To Thomas Cranmer, its principal author, it owes both its literary beauty and doctrinal ambiguity. But its significance does not lie with one man. To Cranmer is due its particular form, but its imposition and indeed its very inception belongs to the Reform wing of the English Church and Court.

As in so many other respects, the reign of Elizabeth marked the end of the anarchy and experiments of the Edwardine interlude and the sterility and tragedy of the reign of Queen Mary. The Settlement on the Prayer Book well illustrates this.

Vincent Weber, O.P.

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[47] Sander, *Anglican Schism*, p. 301-04.

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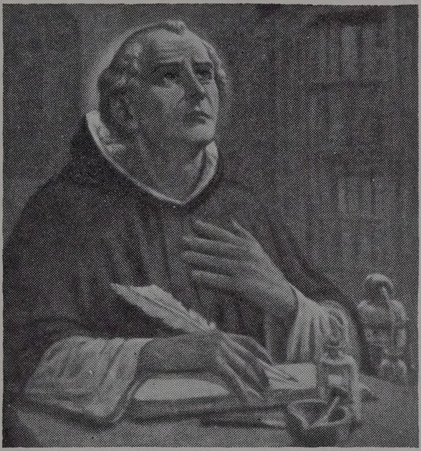

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